CLIMATE CHANGE RESEARCH PROGRAM

ROUND 2

Fiscal Year 2018-2019 Program Solicitation

CALIFORNIA CLIMATE INVESTMENTS
Cap and Trade Dollars at Work

CALIFORNIA STRATEGIC GROWTH COUNCIL

OCTOBER 8, 2018

WITH CORRECTIONS AND UPDATES THROUGH OCTOBER 25, 2018

CORRECTED SOLICITATION

The Climate Change Research Program staff is posting a corrected version of the FY 2018-19 Program Solicitation, which incorporates clarifying edits to the original October 8, 2018 version of the document. This memo provides a summary of the revisions.

Summary of Changes presented in Proposed Final Guidelines

- Time Requirement for Lead PI: In response to concerns about the 80% time requirement for the Lead PI, the SGC has provided additional clarification regarding who must meet this requirement. The SGC's intention with this requirement is to (1) identify the main individual who will carry out the actions described in the proposal and (2) ensure that this individual demonstrates commitment to achieving successful outcomes from the proposal. The SGC requires that this individual have a substantial role in managing and implementing the proposed R&D. This individual should be the person who will serve as the main manager of the entire project portfolio, coordinating projects and tasks, and who will have the authority to implement the proposed R&D. Ultimately, this person will be accountable for the outcomes of the research proposal. Originally, the SGC limited this role to the Lead PI; however, SGC staff have now clarified that the individual who will be managing the proposal can be either a Lead PI, a project manager, or other researcher. Additionally, SGC staff have now clarified that 80% of available time refers to the time available specifically for research.
- Equipment Purchases: In response to a question received during the Pre-Application Workshop/Webinar, the SGC has provided additional clarification regarding what kinds of equipment can be reimbursed. Materials necessary for the creation and testing of prototype technologies/systems are reimbursable, but routine laboratory equipment is not. However, if non-production/non-traditional equipment is needed for monitoring or some other key part of the research, the SGC may make exceptions for these types of equipment. The maximum total allowance from the SGC for equipment purchases is $50,000, and applicants seeking reimbursement for equipment purchases must provide strong justification. Additionally, equipment purchased with State funds will be vested in the State and must follow specific State guidelines.
- Clean-Up Items: SGC staff removed the criteria regarding a Quality Assurance Statement from the Programmatic Review criteria noted in Section VI H. This criteria was part of round 1's solicitation and was accidentally included in this round.
- **All changes will be noted in red. Additions will be bolded, while deletions will have ~~strikethroughs~~.**

EXECUTIVE SUMMARY

State Agency Name: Strategic Growth Council (SGC), Governor's Office of Planning and Research

State Funding Opportunity Title: California Climate Investments: Climate Change Research Program

Submission Date: Research Proposal Submission Packages are due no later than 5:00 p.m. Pacific Standard Time, Friday, November 9, 2018, using the California Department of Water Resources' Grants Review and Tracking System (GRanTS).[1] Submissions uploaded after the closing date and time will not be accepted.

State Funding Opportunity Description: The Strategic Growth Council was allocated $18 million in California Climate Investments Program funds in the fiscal year 2018-2019 budget to administer a second round of grant awards to support the California Climate Change Technology and Solutions Initiative.[2] The purpose of this initiative is to invest in clean technology development and deployment to help bridge the gap to new technologies, modeling, and analysis, leading to greater greenhouse gas (GHG) emission reductions and resilience statewide. Successful research proposals must be located in California. The research submission package must describe how the proposed technology(ies) will demonstrate potential to (1) significantly reduce GHG emissions and (2) be easily replicable and scalable. Research proposals must demonstrate how the proposed technology(ies) supports the development of sustainable communities in California by providing direct and direct benefits to low-income and/or disadvantaged communities, or supports vulnerable populations' adaptation to the impacts of climate change.

This Funding Opportunity includes information needed to apply to the program and the criteria for submitting a Research Proposal for an Innovation Center Research Grant requesting between $3,000,000 and $5,000,000 in total state funding for a three-year period.

The SGC will post a list of recommended research awards on December 10, 2018, and the Council will vote on approving the awards at the December 20, 2018 public meeting. Funded projects are anticipated to start no later than May 1, 2019, and all work must be completed within a 36 month period and contain an end date on or before March 31, 2022.

This solicitation is funded as part of California Climate Investments, a statewide initiative that puts billions of Cap-and-Trade dollars to work by reducing greenhouse gas emissions, strengthening the economy, and improving public health and the environment — particularly in disadvantaged communities.

[1] http://water.ca.gov/grants/

[2] Senate Bill 856, An act to amend the Budget Act of 2018, https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB856

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I. INTRODUCTION

A. PURPOSE OF THE SOLICITATION

The purpose of this solicitation is to allocate up to $17.1 million of grant funding appropriated in the fiscal year 2018-2019 budget for Climate Change Research Program project portfolios. These project portfolios must be consistent with the Strategic Growth Council's (SGC) Research Investment Plan and advance the priorities of the Governor's Climate Change Technology and Solutions Initiative. Investments must: (1) advance the development and deployment of transformative clean technologies to reduce GHG emissions; (2) integrate elements of equity into climate policies; (3) support the development of advanced climate data partnerships and initiatives; and (4) prepare the State for a changing climate.[3] Awarded research projects will demonstrate how State investments can advance California's climate change goals while building innovative, outcome-driven partnerships between the State, the research community, private sector, and community-based organizations.

A proposal for a Climate Change Research Grant must include the following:

- Integrative clean technology research and development (R&D) that addresses one the research innovation fields identified in this solicitation;
- R&D that advances the State's GHG emissions reduction goals;
- Results that deliver economic, environmental, and/or public health benefits for Californians;
- Projects that consider how the proposed investments could provide both direct and indirect benefits to low-income households, low-income communities, disadvantaged communities, and/or populations that are vulnerable to the impacts of climate change, as defined in division 26, part 2, chapter 4.1 of the Health and Safety Code[4];
- R&D approaches that integrate meaningful community engagement and build strong partnerships with community members, decision makers, and other stakeholders throughout the entire project process;
- Free and open access to research results and findings published through final manuscripts of scholarly articles, reports, and other projects produced entirely or primarily with program funding, as pursuant to Assembly Bill 2192[5]; and
- Possession of their intellectual property or a legal right to develop the technology (e.g. through a contractual/license agreement).[6]

[3] http://www.ebudget.ca.gov/2018-19/pdf/BudgetSummary/ClimateChange.pdf

[4] Greenhouse Gas Reduction Fund Investment Plan and Communities Revitalization Act http://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=HSC&division=26.&title=&part=2.&chapter=4.1.&article=

[5] https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB2192

[6] Inventions and intellectual property issues arising from publicly funded research projects are required to be reported to the government agency that funded the project, as pursuant to the Bayh-Dole Act (The Patent and Trademark Law Amendments Act, https://grants.nih.gov/grants/bayh-dole.htm).

II. DESCRIPTION OF FUNDING OPPORTUNITY

A. OVERVIEW

In 2017, the Legislature passed Assembly Bill (AB) 109, which created a climate change research program within the SGC.[7] Statute directed SGC to develop a Research Investment Plan to outline research needs; award grants on a competitive basis; and to have the program open to eligible institutions, including the University of California, California State University, federally-funded national laboratories, and private, non-profit colleges and universities. The Council approved the Research Investment Plan in January 2018 and awarded the first round of awards in July 2018.

In 2018, the Legislature passed Senate Bill (SB) 856, appropriating an $18 million for Round 2 of the Climate Change Research Program within the SGC.[8] This legislation allocates Greenhouse Gas Reduction Fund revenues to support "research on reducing carbon emissions, including clean energy, adaptation, and resiliency, with an emphasis on California." In the Governor's January budget, Governor Brown proposed that the funding be used for the California Climate Change Technology and Solutions Initiative.[9] The Initiative will help to bridge the gap to new technologies, modeling, and analysis, leading to greater GHG emission reductions and resilience statewide. These investments will support the SGC's mission of promoting sustainability, economic prosperity, and quality of life for all Californians. Round 2 will use the same Research Investment Plan that was adopted in 2017-18 to guide investments.

B. PROGRAM GOALS

As noted in the SGC Climate Change Research Program's adopted Research Investment Plan, research proposals must advance at least the seven program goals, listed below, across the project portfolio to be eligible for this round of funding. Applicants must provide a brief description of how the proposed project portfolio addresses these goals.

These goals are to:

1) Invest in research that has a clear and demonstrated connection to the State's climate change goals. Investments should demonstrate potential to significantly reduce GHG emissions, should show potential to be easily replicated and scaled, and should support climate adaptation and resilience.

2) Advance research to support low-income and disadvantaged communities, and advance equitable outcomes in the implementation of the State's climate change policies and investments. Research Institutions should ensure that innovative technologies have direct and indirect benefits to low-income and disadvantaged communities.

3) Build a program that augments, builds connections, and fills gaps across existing research programs. Research Institutions' project portfolios should provide holistic approaches towards addressing one of the identified research innovation fields.

4) Prioritize outcome-based research linked to practical climate action.

[7] https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB109

[8] http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB856

[9] http://www.ebudget.ca.gov/2018-19/pdf/BudgetSummary/ClimateChange.pdf

5) Model meaningful engagement with the research community, private sector, community-based organizations, public agencies, and other stakeholders at all stages of the program to ensure relevance and utility of R&D process, projects, and results.

6) Continue to advance and develop a common research platform to support climate change planning, policy development, and implementation across all sectors at the state, regional, and community scale.

7) Leverage and complement existing research funding and policy innovations to accelerate climate change research, innovation, and policy and technology deployment.

C. PRIORITY INVESTMENT AREA: LOW-GHG TRANSFORMATIVE TECHNOLOGY DEVELOPMENT AND DEPLOYMENT

The Climate Change Research Program's Research Investment Plan identified five Priority Research Areas:

1. Supporting and Protecting Vulnerable Communities from the Impacts of Climate Change
2. Integrating Land Use, Conservation, and Management into California's Climate Change Programs
3. Increasing Data Accessibility and Planning Support for Local and Regional Climate Change Planning
4. Accelerating and Supporting Transitions to Climate Smart Communities
5. Low-GHG Transformative Technology Development and Deployment

The grants awarded in the program's first round in July 2018 supported grants in Priorities 1-4. **This solicitation focuses solely on Research Priority Area 5: Low-GHG Transformative Technology Development and Deployment.** This funding cycle will award innovation center research grants to Research Institutions supporting Priority Area 5.

D. RESEARCH INNOVATION FIELDS

The SGC has identified three **Research Innovation Fields** for this round of investments in Low-GHG Transformative Technology Development and Deployment. These areas were selected to maximize the benefits of this investment, to avoid redundancy with other state grant programs, and to focus investment in areas with high potential for long-term success. Investments in these fields support the SGC's mission of sustainable communities. While project portfolios can only focus on one Research Innovation Field, applicants are encouraged to discuss the potential for co-benefits in one or more of the other fields identified.

Carbon Dioxide Removal

Meeting California's GHG emission reduction targets requires not only a rapid reduction of emissions but also the removal of carbon dioxide from the atmosphere. Commonly referred to as carbon dioxide removal (CDR), CDR permanently removes carbon dioxide from the atmosphere through different processes, creating negative emissions.

The SGC is interested in investing in two paths to induce CDR: engineered solutions, such as direct air capture, and sequestration through natural systems, such as enhanced weathering and land management.

Methane Reduction

SB 1383 (Lara, Chapter 395, Statutes of 2016) directed the California Air Resources Board to approve and begin implementing the Short-lived Climate Pollutant Plan[10] (SLCPs) in January 2018, setting statewide 2030 emission reduction targets for SLCPs. Methane reduction is an important goal of the State's Short-Lived Climate Pollutant Plan and is essential to meeting the State's overall 2030 and 2050 Climate goals. Because of its high global warming potential (GWP), methane reduction can provide significant near-term climate change benefits. Methane reduction can also provide public health co-benefits.

The SGC is interested in investing in reducing methane from agricultural processes, such as enteric fermentation and anaerobic digestion, and through landfill disposal reduction practices.

Heating, Cooling, and Thermal Storage Systems

Heating and cooling are significant sources of GHGs in two ways: indirectly, through electricity usage associated with operation the equipment, and, in the case of cooling, through the direct release of refrigerants contained in the equipment. California is focusing considerable resources on the development of more efficient heating and cooling technologies for existing buildings. These technological advancements will reduce energy usage and can also result in reductions in high GWP refrigerant emissions.

The SGC is interesting in investing in integrated strategies for scale-up of efficient, non-fossil fuel heating systems for use in single/multifamily homes and in determining the best potential applications of using alternative, low-GWP refrigerants that would be cost effective, while addressing health and safety concerns for priority populations.

E. TECHNOLOGY READINESS

Technology development is the process of developing and demonstrating new or unproven technology, the application of existing technology to new or different uses, or the combination of existing and proven technology to achieve a specific goal. Technology readiness measures the extent to which a technology is suited for deployment in a real, operational environment. It is often used as a measure of risks associated with introducing new technologies into existing systems and standard operating procedures. Applicants will be asked to address technology readiness in their applications and, specifically, how the SGC's investment will help to advance a given project along the technology readiness scale.

To create a consistent baseline for comparison between maturities of various technologies, the SGC will be using the US Department of Energy's Technology Readiness Level (TRL).[11] TRL assessment aims to evaluate a technology's maturity against a set of requisite technical, programmatic, and manufacturing indicators identified from relevant literature review and experts to enable a successful and accelerated transition of technologies from conceptualization, discovery, and development to eventual deployment.

Applicants will be asked to use the following guide to discussion technology readiness:

[10] https://www.arb.ca.gov/cc/shortlived/shortlived.htm

[11] https://www.energy.gov/sites/prod/files/em/Volume_I/O_SRP.pdf

Figure 1: Technology Readiness Level Descriptions

Technology Readiness Level	Qualitative Description
TRL 1	Basic principles observed and reported
TRL 2	Technology concept or process application formulated
TRL 3	Applied research of key analytical characteristic(s)
TRL 4	Small-scale prototype/process tested in laboratory
TRL 5	Large-scale prototype/process tested in field
TRL 6	Subsystem model/process field demonstration
TRL 7	Full system/process demonstration in relevant environment
TRL 8	Commercial demonstration, full scale deployment in final form
TRL 9	Commercial operation in relevant environment

Projects can start from any TRL, but **at least one project in the portfolio must achieve TRL 7 by the end of the Grant Agreement Term**. Applicants must outline a plan for achieving their TRLs for each project in the portfolio and identify both potential barriers to development and potential strategies for overcoming said barriers.

Applicants will be evaluated on the ability to develop a submission package and project portfolio that invests in one of the Research Innovation Fields and addresses all seven goals of the program.

F. PROGRAM AUTHORITY

The Strategic Growth Council is authorized to issue Climate Change Research Program grants under Item 0650-001-3228, provision 2 of section 6.00 of the Budget Act of 2018 (Chapter 30, Statutes of 2018).

G. KEY ACTIVITIES SCHEDULE

The solicitation's key activities, dates, and times are presented below.

Figure 2: Key Activities Schedule

Task	Date
SGC Council Meeting: Adopt Updated Research Investment Plan	September 25
SGC Council Meeting: Direct staff to develop RFP	September 25
Round 2 Notice of Request for Proposals Released	October 8
Webinar—Proposal Submissions	Mid-October (TBA)
Deadline for Written Questions	October 22
Application Submission Deadline	November 9
Proposal Review Period	November 12-29
External Advisory Committee Meeting	November 29
Interagency Committee Award Recommendation Meeting	December 6
List of Award Recommendations Posted	December 10
SGC Council Meeting—Awards Approved by the Council	December 20

H. NOTICE OF PRE-SUBMISSION RESEARCH PROPOSAL WORKSHOP

SGC staff will hold one Pre-Submission Research Proposal Webinar to discuss the solicitation with researchers. Participation is optional but encouraged. Researchers may attend the workshop in-person at the Strategic Growth

Council's office in Sacramento, via the internet (WebEx), or via conference call on the date, time, and location listed on the SGC's website.

I. QUESTIONS

During the solicitation process, direct questions to SGC staff person listed below:

Douglas Burt
Strategic Growth Council
1400 Tenth Street
Sacramento, California 95814
Telephone: (916) 322-1586
E-mail: research@SGC.CA.GOV

Applicants may ask questions at the Pre-Submission Research Proposal Workshop, and may submit written questions via mail, and by electronic mail. However, all **technical** questions must be received by the deadline listed in the "Key Activities Schedule" (Figure 1, above). **Non-technical** questions (e.g., questions concerning format requirements or attachment instructions) may be submitted to SGC staff at any time prior the deadline for submitting a Research Proposal.

The SGC will email a question and answer document to all parties who attend the Pre-Submission Research Proposal Workshop, provided they included current contact information on the workshop's sign-in sheet. The SGC will also post this document on the Program's website: http://www.sgc.ca.gov/programs/climate-research/.

If an **ambiguity, conflict, discrepancy, omission, or other error** is discovered in the solicitation at any time prior to the submission deadline, the proposer may notify the SGC in writing and request modification or clarification of the solicitation. The SGC, at its discretion may provide modifications or clarifications either by an addendum to the solicitation or by a written notice to all parties who requested the solicitation. At its discretion, the SGC may re-open the question/answer period to provide all applicants the opportunity to seek any further clarification required.

Any verbal communication with an SGC employee concerning this solicitation is not binding on the State and will in no way alter a specification, term, or condition of the solicitation. Therefore, all communication should be directed in writing to the assigned SGC staff person identified above.

III. AWARD INFORMATION

A. FUNDING AVAILABILITY

This solicitation will fund up to $17.1 million in grant awards. The SGC will grant up to five awards at a minimum of $3,000,000 and maximum of $5,000,000. A Standard Grant or Cooperative Agreement, providing cost-reimbursements, is the method used to execute awards to grant recipients. Applicants are strongly encouraged to seek external, leverage funding to increase the likelihood of successful R&D. In-kind goods, services, and other support may be accepted as eligible sources of leverage if they are adequately defined and documented. They will be subject to review by the State during the application review process.

B. PROJECT/AWARD PERIOD

All funds administered through this program must be encumbered and spent by June 30, 2022. The SGC requires that researchers complete all of project work by March 31, 2022.

C. CHANGE IN FUNDING AMOUNT

Along with any other rights and remedies available to it, the Strategic Growth Council reserves the right to:

- Increase or decrease the available funding and the group minimum/maximum award amounts described in Section III B.
- Allocate any additional or un-awarded funds to passing proposals.
- Reduce funding to an amount deemed appropriate if the budgeted funds do not provide full funding for agreements. In this event, the Recipient and SGC's Agreement Manager will reach agreement on a reduced Scope of Work commensurate with available funding.

IV. ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

Researchers (including qualified scientists, engineers, and educators) affiliated with one of the following institutions:

- University of California,
- California State University,
- Federally-funded national laboratories located in California,
- Private, non-profit colleges and universities located in California, and
- Private, non-profit research organizations located in California.

Institutions can submit **a maximum of two proposals** that address one or more of the identified Research Innovation Fields in Section II D.

There are no restrictions about who can serve as the Lead Principal Investigator (PI) within these Research Institutions; **however, the SGC requires that a specific individual—whether it be a Lead PI, project manager, or other researcher—must have a substantial role in managing and implementing the proposed research (more than 80% of available time on their project(s)). This individual will serve as the manager of the entire project portfolio and the main point of contact. S/he will coordinate projects and tasks and will have the authority to implement the proposed R&D. S/he also must have strong technical and administrative knowledge in the selected Research Innovation Field. If this person is not the Lead PI, this individual may work with the Lead PI on the design and development of the research.** ~~however, a Lead PI must have a substantial role in designing and conducting the proposed research (more than 80% of available time on their project(s)).~~ Other employees can serve as a Lead PI or co-PI on up to two proposals. Additionally, researchers may appear as a contributor on other solicitations (no limit). In the event that an individual exceeds the Lead PI proposal limit, proposals received within the limit will be accepted based on earliest date and time of proposal submission (i.e., the first two proposals received prior to the deadline will be accepted and the remainder will be returned without review).

Researchers are highly encouraged to include contributors and sub-recipients from community-based organizations, non-profit organizations, local or tribal governments, for-profit businesses, and/or other institutions as an integral part of the research and as sub-recipients on research proposals. Entities located outside of California are eligible to serve as sub-recipients for proposed research.

B. ELIGIBLE PROJECTS

Eligible project portfolios will focus on one of the Climate Change Technology and Solutions Initiative's Research Innovation Fields and advance the seven program goals. Specifically, each project portfolio will advance California's climate goals by facilitating the reduction of GHG emissions in California, benefiting low-income or disadvantaged communities, and including robust, diverse, multi-stakeholder partnerships featuring key stakeholders. Partners may include, but are not limited to, community-based organizers, policymakers, business professionals, and others that can advance the development and deployment of transformative clean technology in an effective and equitable manner.

Applicants will submit a research proposal that outlines a portfolio with projects of various sizes, from smaller projects focused on earlier stage prototype development projects to later stage, at-scale demonstration pilot projects. As noted above in Section III A, awards will range from $3,000,000 to $5,000,000 to support up to five

research proposals. Applicants are strongly encouraged to seek external leverage funding to increase the likelihood of successful R&D.

C. ELIGIBLE COSTS

Administrative and direct costs, as described below, are reimbursable costs in this program.

1) Administrative costs that directly apply to the accomplishment of a project or partnership may account for up to five (5) percent of the awarded funds. "Administration of the grant" may include, but is not limited to: activities required for coordinating the Grant Recipient/Partner relationship, reporting, invoicing, etc. Administrative costs may include but are not limited to: staff salaries and benefits, supplies, and other resources used to administer the grant. This definition supersedes any definition of administrative costs provided by other California Climate Investment programs.

2) Direct costs defined as costs directly tied to the implementation of an awarded research proposal are reimbursable costs. ~~with the exception of equipment purchases.~~ These costs will vary depending on the project but include the salaries and fringe benefits of project staff, partners and sub-recipients; travel, materials, supplies and miscellaneous costs that are attributed to the project(s). **Materials necessary for the creation and testing of prototype technologies/systems are reimbursable, but routine laboratory equipment purchases are not reimbursable.[12] If non-production/non-traditional equipment is needed for monitoring or some other key part of the research, applicants are strongly encouraged to use external leverage funding for these purchases. However, the SGC may make exceptions for these types of equipment that are required for tasks that support the overall goals of the proposals, including data collection and monitoring. The maximum total allowance from the SGC for equipment purchases is $50,000, and any applicant seeking reimbursement for a specified equipment purchase(s) must provide justification for this purchase(s). Additionally, any equipment purchased with State funding must follow California Department of General Services' guidelines regarding equipment purchase disposal following completion of the grant agreement.[13]**

When equipment is purchased with State funds as part of the grant agreement must clearly state that title to any equipment purchased with State funds will vest in the State. On termination of the contract, the State may:

1. **Request such equipment be returned to the State, with costs incurred by the contractor for such return being reimbursed by the State.**
2. **Authorize the continued use of such equipment for work to be performed under a different agreement or contract.**

The State may, at its option, repair any damage or replace any lost or stolen items and deduct the cost thereof from the contractor's invoice to the State, or require the contractor to repair or replace any damaged, lost, or stolen equipment to the satisfaction of the State with no expense to the State. In the event of theft, a report must be filed immediately with the California Highway Patrol (SAM § 8643).[14]

[12] Equipment is defined as an article or physical resource used to implement an operation or activity with a normal life expectancy of one year or more and an approximate unit price of $5,000 or more.

[13] http://sam.dgs.ca.gov/TOC/3500.aspx

[14] https://www.documents.dgs.ca.gov/sam/SamPrint/new/sam_master/sam_master_file/chap8600/8643.pdf

The contractor should maintain an inventory record for each piece of non-expendable equipment purchased with funds provided under the terms of the grant agreement. The inventory record of each piece of such equipment should include the date acquired, total cost, serial number, model identification (on purchased equipment), and any other information or description necessary to identify said equipment. Non-expendable equipment so inventoried are those items of equipment that have a normal life expectancy of one year or more and an approximate unit price of $5,000 or more. In addition, theft-sensitive items of equipment costing less than $5,000 should be inventoried. A copy of the inventory record must be submitted to the State on request by the State (SAM § 8600).[15]

Procedures for the handling and accounting of equipment through grant agreements are the same as that for handling through regular State purchasing.

Additional information regarding non-production/non-traditional equipment purchasing can be found in Appendix A.

3) Indirect costs that comply with the program's Research Investment Plan are reimbursable. Specifically, a maximum indirect cost rate of 25% was established for the Climate Research Program. Indirect cost rates may vary under these circumstances. Please note: cost effectiveness is one of the determinants for project awards.
   - **University of California and California State University** proposals can apply a negotiated rate that is lower than the maximum rate, if an agreement to apply that rate has been reached with a state agency or department.
   - **Federally Funded National Lab** proposals can use a higher rate, as negotiated with the California Department of General Services in compliance with public resources code 12500-02 or a previously established rate agreement with a State agency or department.
   - **Private Universities** may charge a negotiated rate other than the maximum rate listed to its research proposals if that rate agreement was previously established with a State agency or department is in place.
   - **Private, Non-Profit Research Institutions** may charge a negotiated rate other than the maximum rate listed to its research proposals if that rate agreement was previously established with a State agency or department is in place.

[15] http://sam.dgs.ca.gov/TOC/8600.aspx

V. PROPOSAL ORGANIZATION AND SUBMISSION INSTRUCTIONS

A. RESEARCH PROPOSAL SUBMISSION FORMAT AND PAGE LIMITS

The following table summarizes formatting and page limit requirements:

Figure 3: Submission Formatting

FORMAT	Font: 11-point, Arial (excluding Excel spreadsheets, original template headers and footers, and commitment or support letters). Margins: No less than one inch on all sides (excluding headers and footers). Spacing: Single spaced, with a blank line between each paragraph. Pages: Numbered and printed double-sided (when determining page limits, each printed side of a page counts as one page). Signatures: Manual (i.e., not electronic). File Format: MS Word version 2007 or later (.doc or .docx format) or PDF files, excluding Excel spreadsheets and commitment or support letters. File Storage: Electronic files of the research proposal submission package must be submitted as part of the GRanTS web-based grant application submission tool.
PAGE LIMITS	Title Page: One page. Proposal Narrative: Five pages, including figures, tables, graphics and charts. Research Institution Deployment Profile: One page Project Summary: Two pages per project in portfolio Resume: One page per senior partner in the research proposal's partnership Letters of Support: one page for each reference, maximum of seven letters There are no page limits for the following items: – Submission Questionnaire (Attachment 1) – Budget Forms (Attachment 2) – Scope of Work (Attachment 3)

B. METHOD FOR DELIVERY

The method of delivery for responding to this solicitation is through the Department of Water Resources' Grants Review and Tracking System (GRanTS), a web-based grants application tool, available at: https://www.water.ca.gov/Work-With-Us/Grants-And-Loans/GRanTS/. This online tool allows applicants to submit their electronic documents to SGC prior to the date and time specified in this solicitation. Electronic files must be in Microsoft Word XP (.pdf format) and Excel Office Suite formats unless originally provided in the solicitation in another format. Attachments requiring signatures may be scanned and submitted in PDF format. Completed Budget Forms, Attachment 2, must be in Excel format. The system will not allow users to submit a research proposal after the due date and time.

First-time users must register as a new user to access the system. Applicants will receive an email after documents have been submitted and received by the SGC. This email indicates that the SGC has received something from the proposer and is NOT a confirmation that all submitted or required documents were received. The proposer is solely responsible for ensuring all required documents are received by the SGC. A tutorial of the system is available

online, and the system will be reviewed at the Pre-Submission Research Proposal Webinar, which will be recorded and made available on the SGC's website. The SGC staff person identified in Section II H of the solicitation is available to provide additional assistance.

C. RESEARCH PROPOSAL SUBMISSION ORGANIZATION AND CONTENT

In addition to completing the Research Proposal Questionnaire (Attachment 1) in the GRanTS Application system, below is a description of each required section of the submission package. Completeness in submitting all the information required in each attachment will be factored into the scoring.

1. Title Page

The title page must include:

- The Lead PI's last name [hyphen] a brief (one sentence) project description.
- Name, affiliation, and contact information (address, telephone, email) for each of the partner institutions
- Requested budget amount
- Proposed period for conducting research (start date/end date)
- Contact information for the following individuals responsible for executing a grant award:
  - Authorized Official: the individual with the authority to sign a contract or grant that makes it a legal binding agreement for the institution receiving a grant award.
  - Administrative Contact: the individual responsible for administrative and reporting duties related to the grant award.
  - Authorized Financial Contact: the individual responsible for any financial, accounting, or invoicing related inquiries.
- Lead PI's signature line (including printed/typed name and date)

2. Proposal Narrative (Attachment 4)

This narrative should detail the proposal's plan and approach to conducting R&D that will advance one of the Research Innovation Fields outlined above. The proposal narrative must include the following information, separated into different sections:

- A holistic description of the proposed project portfolio
- The project portfolio's potential for GHG emission reduction and replicability/scalability
- The project portfolio's benefits to low-income and disadvantaged communities, as well as populations that are vulnerable to the impacts of climate change
- Project management structure, including partnerships, and roles and responsibilities
- Important benchmarks, milestones, and metrics to track progress

More specific information regarding the proposal narrative's sections can be found in the Appendix in Attachment 4.

3. Research Institution Deployment Profile

Applicants should submit a short profile of their institution's history of R&D and should demonstrate a track record of success.

4. **Project Summary(s)**
   Applicants should submit a short summary of each project in the proposal that includes a technical description as well as a description of how that project addresses the Program's goals and objectives outline in both the Research Investment Plan and in this Solicitation. Additionally, each project summary should provide a vision and timeline for how that project can be scaled up for broader application and eventual, widespread commercialization or adoption. This should include and extend beyond the timeline of the grant. Applicants should identify which phase of this potential trajectory is supported by the SGC's research innovation center grant.

5. **Resumes**
   Applicants should submit a short resume for each senior project participant include in the proposal. These documents should clearly describe the research interests and expertise of key personnel and their affiliated Research Institutions, as well as examples of prior R&D projects completed.

6. **Letters of Support**
   All applicants must include at least one support letter from a project stakeholder (i.e., an entity or individual that will benefit from or be involved in the research). In the letter the stakeholder(s) should (1) describe their interest or involvement in the project; (2) indicate the extent to which the project has the support of the relevant industry, community and/or organizations; (3) describe how they intend to support or contribute to the project; and, (4) if applicable, indicate how the research could result in benefits to a low-income or disadvantaged community. Applicants cannot submit letters of support from other California state agencies.

7. **Budget (Attachment 2)**

   The budget should outline how the initial funds will be invested and how applicants could potentially recycle capital from unsuccessful projects to those which demonstrate success. In addition, budgets should be scalable in the event that the SGC awards additional or fewer funds than requested by the proposals.

   The budget forms are in MS Excel format. Complete and submit information on all budget worksheets. The salaries, rates, and other costs entered on the worksheets will become a part of the final agreement.

   - All project expenditures must be made within the approved agreement term. The entire term of the agreement and projected rate increases must be considered when preparing the budget.
   - The budget must reflect estimates for actual costs to be incurred during the agreement term. The SGC may only approve and reimburse for actual costs that are properly documented in accordance with the grant terms and conditions. Rates and personnel shown must reflect the rates and personnel the proposer would include if selected as a Grant Recipient.
   - The proposed rates are considered capped and may not change during the agreement term. The Grant Recipient will only be reimbursed for actual rates up to the rate caps.
   - The budget must NOT include any Grant Recipient profit from the proposed project, either as a reimbursed item, match share, or as part of overhead or general and administrative expenses (subcontractor profit is allowable, though the maximum percentage allowed is ten percent of the total subcontractor rates for labor, and other direct and indirect costs as indicated in the Category Budget form). Please review the terms and conditions and budget forms for additional restrictions and requirements.

- The budget must allow for the expenses of all meetings and products described in the Scope of Work. Meetings may be conducted at the SGC's offices or by conference call, as determined by SGC Agreement Manager.
- Equipment purchases are not an allowable expense under this program.
- Applicants must provide budget details for any leverage funding, including in-kind, if applicable.
- Applicants must budget for potential commercialization technical assistance during grant period.
- Applicants must budget for open access publishing for all of the published materials that report on this research.
- The budget must NOT include program funds spent outside of the United States or for out of country travel.

8. Scope of Work (Attachment 3)

Proposers must include a completed Scope of Work. The Scope of Work identifies the tasks required to complete the project or portfolio of projects. It includes a project schedule that lists all products, meetings, and due dates. This should include a milestone/outcomes chart that measures results featuring technology transfer, research, outreach, and other specific milestones; as well as outcomes and benefits that will derive from conducting the research. All work must be scheduled for completion by March 21, 2022.

D. ANTICIPATED ANNOUNCEMENT AND AWARD DATES

Final funding decisions will be made based on the results of the external expert review, the programmatic review, and the approval of the Council during a public meeting. As noted in the selection factors section above, in making the final funding decisions SGC executive and key staff may also consider program balance and available funds.

Should a proposal be recommended to the Council for award, the Lead PI might be contacted by SGC staff for assistance in preparing the public award abstract and its title describing the project, as well as justifying the expenditure of California Climate Investment Program funds. Project award abstracts must articulate how the project reduces GHG emissions, has a clear and demonstrated connection to the State's climate change goals, and benefits low-income or disadvantaged communities.

An award recommendation by SGC staff does not constitute approval or obligation of funds. Applicants are cautioned that commitments, obligations or awards can only be made by a majority vote of the Council. No commitment on the part of the SGC or the State of California should be inferred from technical or budgetary discussions with SGC staff. A Lead PI or organization that makes financial or personnel commitments in the absence of a signed grant or cooperative agreement does so at its own risk.

Research project Grant Agreements may be forwarded to the Air Resources Board's California Climate Investment Program's Grant Agreement Management Division, and to the Department of General Services for review and approval in accordance with the State of California procedures.

VI. EVALUATION AND REVIEW PROCESS

A. RESEARCH PROPOSAL EVALUATION

Proposals will be evaluated and scored based on responses to the information requested in this solicitation. To evaluate submissions, the SGC will organize an Advisory Committee consisting of external panelists selected for disciplinary expertise and a State Interagency Committee consisting of representatives from state agencies and departments. Each proposal is considered on its own merits without regard for institutional affiliation. Ranking is based on the project's Merit Review and Programmatic Review.

Note: Applicants will not be reimbursed for time spent answering clarifying questions throughout the evaluation process.

B. INTAKE AND SCREENING

SGC staff will screen submission packages for compliance with the screening criteria in part E of this section (Submission Screening Criteria). Submissions that fail any of the screening criteria will be rejected, without notice to the proposer. SGC staff may conduct optional in-person or telephone Clarification Interviews with applicants at their discretion during the screening process to clarify and/or verify information submitted in the Research Proposal Submission Package. However, these interviews may not be used to change or add to the content of the original submission.

C. MERIT REVIEW OF PROPOSED RESEARCH

Research proposals that successfully pass the screening process will be submitted to the program's Advisory Committee for review and scoring based on the scoring criteria specified in part F of this section (Merit Review Evaluation Criteria). Appropriate expert reviewers will review research proposals based on the criteria and process described in this section. This review process is designed to evaluate the scientific and community engagement merits of each submission.

The Advisory Committee will be comprised of an interdisciplinary external assembly of academic and technical experts representing the physical and social sciences, including climate and environmental scientists, engineers, planning and environmental justice scholars, public health practitioners, social scientists, venture capitalists, business professionals, and/or economists who are accomplished in their respective disciplines and proficient in the technical subjects they are reviewing. Additionally, the committee will include members with expertise that advance the goals of this program concerning meaningful community engagement and equity integration.

Evaluation Criteria: The Advisory Committee will evaluate each submission based on the extent to which the proposal demonstrates its scientific merit as identified in the program's Research Investment Plan—specifically in the area of research merits, comprising 65 percent of the merit review score, meaningful engagement, comprising 30 percent, and leverage funding, comprising the other 5 percent.

The Advisory Committee will assign a rating reflecting its evaluation for the research merits and meaningful engagement of each submission using a scoring rate of excellent, very good, good, fair, or poor. A final, cumulative rating for each research proposal will be used to determine which submissions undergo an internal programmatic review. Research proposals that receive a fair or poor rating will not continue to the next stage of the review process. SGC staff may, at their discretion, arrange a telephone interview with research applicants during the merit review evaluation process to assist the Advisory Committee with clarification and/or verification of information submitted in the proposal. However, these interviews may not be used to change or add to the content of the original submission.

D. PROGRAMMATIC REVIEW OF PROPOSED RESEARCH

Proposals receiving final ratings of excellent to good from the Advisory Committee will move on to a review of additional criteria, specifically regarding the institution's past performance, project management capacity and policy considerations listed in part G of this section. The purpose of the programmatic review is to ensure an integrated research program portfolio and determine which submissions to recommend for award. In conducting the programmatic review, a State Interagency Committee will consider information provided by the research proposer and may consider information from other sources, including prior and current grantor and agency files.

E. SUBMISSION SCREENING CRITERIA

Figure 4: Screening Criteria

SCREENING CRITERIA *Research Proposal Submission Packages must pass ALL criteria to progress to Stage Two.*	**Yes/No**
1. The Research Proposal Submission package is received by SGC through the **GRanTS** web-based online application system by the due date and time specified in the "Key Activities Schedule" (Figure 1 of this solicitation).	☐ Yes ☐ No
2. The submission's Title Page includes the signature of the Lead PI.	☐ Yes ☐ No
3. The submission demonstrates how the proposed technology will facilitate the reduction of GHG emissions in California.	☐ Yes ☐ No
4. The submission discusses how the innovation will both directly and indirectly benefit low-income and/or disadvantaged communities.	☐ Yes ☐ No
5. The submission demonstrates how this investment will advance the technology's research and development to TRL 7.	☐ Yes ☐ No
6. The submission includes a plan for eventual deployment and commercialization of this technology.	☐ Yes ☐ No

F. MERIT REVIEW EVALUATION CRITERIA

Proposals that pass all of the Screening Criteria will be evaluated based on the Merit Review Criteria (Figure 6) using the Scoring Scale identified below (Figure 5). Each criterion has an assigned percentage and is divided into multiple sub-criteria. The sub-criteria are not equally weighted. The Proposal Narrative (Attachment 4) must respond to each sub-criterion, unless otherwise indicated.

Scoring Scale

Figure 5: Merit Review Scoring Scale

Scale	Explanation for Ranking
Poor	– The response does not adequately address the criteria. – There are one or more omissions, flaws, or defects or the criteria are addressed in a limited way that results in a low degree of confidence in the proposed solution.
Fair	– The response adequately addresses the criteria. – Any omissions, flaws, or defects are inconsequential and acceptable.

Good	– The response fully addresses the criteria with a good degree of confidence in the proposer's response or proposed solution. – There are no identified omissions, flaws, or defects. Any identified weaknesses are minimal, inconsequential, and acceptable.
Very Good	– The response fully addresses the criteria with a high degree of confidence in the proposer's response or proposed solution. – The proposer offers one or more enhancing features, methods, or approaches that exceed basic expectations.
Excellent	– All criteria are addressed with the highest degree of confidence in the proposer's response or proposed solution. – The response exceeds the requirements in providing multiple enhancing features, a creative approach, or an exceptional solution.

G. TECHNICAL MERIT EVALUATION CRITERIA

The Project Narrative (Attachment 4) must respond to each criterion below, unless otherwise indicated. The responses must directly relate to the solicitation requirements and focus as stated in section I part A, Purpose of the Solicitation and section II B, Program Goals. Failure to comply with the solicitation could be grounds for rejection of a research proposal as stated in Section VII C.

Figure 6: Technical Merit Criteria

Scoring Criteria	Scoring Weight
1. Research Merits a) The degree to which the proposed research will contribute to reaching the goals of the Climate Change Research Program as described in the Research Investment Plan, and the degree to which the proposed activity addresses the needs of important state, regional, or community constituencies. b) The degree to which the proposed technology project portfolio demonstrates potential for significant GHG emission reduction and for scalability and replicability. The applicant clearly describes the proposed technology, how the technology is unique and innovative, and how the technology will advance the current state-of-the-art. c) The degree to which the applicant has shown the impact that SGC funding and the proposed project portfolio would have on the relevant field and application and how the proposed idea would significantly improve technical and economic performance relative to the state-of-the-art. d) The degree to which the applicant has clearly described the overall soundness, adequacy, and completeness of the proposed submission demonstrated through: • New or holistic approaches to solving problems and exploiting opportunities related to climate; • A focus on important or potentially important ecosystem problems, resources and issues.	**65%**

• Approaches that challenge and seek to shift current paradigms by using innovative theoretical concepts or methodologies, instrumentation or interventions applicable to one or more fields of research. e) The degree to which the applicant has shown how the proposed technology will overcome the shortcomings, limitations, and challenges in the relevant field and application and to which the applicant has identified risks and challenges, including possible mitigation strategies associated with the proposed technology development plan. f) The degree to which the applicant has clearly defined the project portfolio's baseline and milestones, quantifiable metrics to track progress, and the strength of these metrics. g) The degree to which Investigators are qualified by education, training and/or experience to execute the proposed activity. Evidence of any record of achievement with previous funding.	
2. Meaningful Engagement a) The degree to which the project portfolio will provide direct and indirect benefits to the State's low-income and disadvantaged communities, or populations who are most vulnerable to the impacts of climate change b) The degree to which the submission demonstrates how the proposal incorporates well established strong and meaningful partnerships, by • Engaging with a diverse set of partners that include researchers, community-based organizations, businesses, local government and other stakeholders at all stages of the program to ensure relevance and utility of research process, projects, and results. • Addressing a need identified by an audience of focus, such as vulnerable populations, that will need to adapt to the impacts of climate change. c) The degree to which the submission describes how it will successfully build relationships with new partners that results in opportunities for input and feedback on the project's design and approach through delivery mechanisms and communication processes used to disseminate research findings, data, and recommendations. And, the extent to which the researchers directly involve the community in their research using methods such as, Community Based Participatory Research, community-based pilot projects, and community monitoring/data gathering. d) The degree to which the submission provides assistance and shares resources with others to advance the climate goals of engaged audiences. e) The degree to which the submission demonstrates an established multi-stakeholder or multi-institutional partnership, organized into a collaborative structure that will advise and oversee the project's progress, stakeholder rapport, and application of research findings/results. f) The degree to which the submission demonstrates a plan for eventual deployment and commercialization of innovative technology that is targeted in particular towards low-income and disadvantaged communities. g) The degree to which users or potential users of the results of the proposed R&D have been brought into the planning of the activity, will be brought into the execution of the activity, or will be kept apprised of progress and results.	**30%**

3. Leverage Funding a) The degree to which the submission demonstrates public and private leverage funding. Prior or existing funding from other State agencies will not be considered as leverage funding.	**5%**

H. PROGRAMMATIC REVIEW RANKING CRITERIA

This review ensures that the SGC achieves its goal to invest in cross-cutting research that builds community resilience, integrates land use and development considerations, and facilitates the transformation of California communities through outcome-based research. A State Interagency Committee organized by the SGC will review the Advisory Committee scores and institute a final ranking using the information provided in the solicitation, considering information from other sources, including prior and current grantors and agency files.

Figure 7: Programmatic Review Criteria

Ranking Criteria
1. Project Management (sub-criteria are equally weighted): a) **Management**: The degree to which the submission demonstrates that the project portfolio will be adequately managed to ensure the timely and successful achievement of objectives using appropriate schedules and milestones. And the degree to which the submission demonstrates the applicant will adequately track and measure progress toward achieving expected results (outputs and outcomes). ~~b) **Quality Assurance**: The degree to which the submission includes an appropriate and adequate Quality Assurance Statement.~~ c) **Resources and Cost Controls**: The degree to which the submission demonstrates that the facilities, equipment, and budget are appropriate, adequate, and available. And the degree to which the submission demonstrates that well-defined and acceptable approaches, procedures, and controls are used to ensure timely and efficient expenditure of awarded grant funds.
2. Past Performance and Reporting History. Staff will review information related to the proposed Lead PI's Past Performance and Reporting History under prior state agency agreements (including interagency agreements, grants and cooperative agreements) for performance initiated within the last three years (of similar in size and scope to the proposed project) in terms of: i. **Level of success** in managing and completing each agreement. ii. **History of meeting the reporting requirements** under each agreement.

Ranking Criteria
3. Policy Considerations (Weights for each of the sub-criteria will be included in the Grant Solicitation): The degree to which it is deemed that the submission should be selected out-of-rank based upon one or more of the following factors, thereby awarding a project that may not necessarily have received the highest merit review score. i. **Availability of funding** ii. **Balance and distribution of funds**: – Geographically – By type of institutions – By type of partners – By research areas – By project types – By cost effectiveness – By climate theme iii. **Duplication of other projects** funded or considered for funding by the SGC or other State agencies iv. **Proposer's prior award performance** v. **Partnerships** and/or participation of targeted groups vi. **Ability to accelerate commercialization** and overcome key market barriers vii. **Potential for increased employment and manufacturing** in California viii. **Accelerate technological advances in areas** that industry by itself would not likely undertake because of technical and/or financial uncertainty ix. **Adequacy of information** necessary for SGC staff to make a determination and draft necessary documentation before recommendations for funding are made to the Council x. **Leverage Funding** xi. **Cost effectiveness**

VII. AWARD AND ADMINISTRATION INFORMATION

A. AGREEMENTS

Research proposals approved for funding by the Council will be developed into a grant agreement. Researchers may begin the project portfolio only after full execution of the grant agreement, signed by the Research Institution and the SGC.

- **Agreement Development:** SGC staff will send the Research Institution a grant agreement for approval and signature. The agreement will include the applicable terms and conditions and will incorporate this solicitation by reference. The SGC reserves the right to modify the award documents (including the terms and conditions) prior to executing any agreement.
- **Failure to Execute an Agreement:** If the SGC is unable to successfully execute an agreement with a Research Institution, it reserves the right to cancel the pending award and to fund another eligible research proposal.
- **Agreement Amendment:** The executed agreement may be amended by mutual written consent of the SGC and the Research Institution. The agreement may require an amendment as a result of project review, changes in project scope, and/or availability of funding.

B. RANKING, NOTICE OF RECOMMENDED RESEARCH AWARDS AND AGREEMENT DEVELOPMENT

Ranking and List of Recommended Research Awards: For Research proposals that are recommended to receive funding, the SGC will post a list of recommended awards that includes: (1) the recommended funding amount; (2) the rank order of applicants; and (3) the amount of each proposed award. The SGC will post this list on its website. The members of the Council must vote to award funds to a recommended research project at a publically noticed meeting in order for that project to receive funding.

Debriefings**:** Applicants that do not receive a Grant Award may request a debriefing after the Council votes to approve the awards by contacting the SGC staff person listed in Section II H. A request for debriefing must be received in writing **no later than 30 calendar days** after the Council has approved awards.

The SGC reserves the right to allocate any additional funds to passing Research proposals and to negotiate with successful applicants to modify the project's scope, schedule, and/or level of funding.

C. GROUNDS TO REJECT A RESEARCH PROPOSAL OR CANCEL AN AWARD

Research proposals that do not pass the screening stage will be rejected. In addition, the SGC reserves the right to reject a submission and/or to cancel an award if the following circumstances are discovered at any time during the review or agreement process:

- The submission contains false or intentionally misleading statements or references that do not support an attribute or condition contended by the proposer.
- The submission is intended to erroneously and fallaciously mislead the State in its evaluation and the attribute, condition, or capability is a requirement of this solicitation.
- The submission does not literally comply or contains caveats that conflict with the solicitation, and the variation or deviation is material.
- The submission does not contain sufficient information to enable a useful evaluation to be conducted.
- The submission has received unsatisfactory evaluations from the SGC or another California state agency.
- The research proposal is not submitted in the format specified in sections III through VI of the solicitation.

- The project end date extends past the anticipated agreement end date specified in the "Key Activities Schedule" (Figure 1 of this solicitation).
- The Research Institution included a statement or otherwise indicated that it will not accept the terms and conditions or that acceptance is based on modifications to the terms and conditions.
- The research proposal contains confidential information or identifies portion(s) of the proposal as confidential.

D. MISCELLANEOUS

Solicitation Cancellation and Amendment: It is the policy of the SGC not to release a solicitation unless and until there is a bona fide intention to award an agreement. However, if it is in the State's best interest, the SGC reserves the right to do any of the following:

- Cancel this solicitation;
- Revise the amount of funds available under this solicitation;
- Amend this solicitation as needed; and/or
- Reject any or all Research proposals received in response to this solicitation.

If the solicitation is amended, the SGC will send an addendum to all parties who requested the solicitation, and will also post it on the SGC's website at: http://sgc.ca.gov/programs/climate-research/. The SGC will not reimburse the proposer for submission development expenses under any circumstances, including cancellation of the solicitation.

Modification or Withdrawal of Research Proposal Submission Package: Applicants may withdraw or modify a submission package before the deadline to submit by sending a letter to the SGC staff identified in Section II G of this solicitation. Research proposals cannot be changed after that date and time. A submission cannot be "timed" to expire on a specific date. For example, a statement such as the following is non-responsive to the solicitation: "This research proposal and the cost estimate are valid for 60 days."

Confidentiality: Though the entire evaluation process from receipt of research proposal submission package up until SGC staff posts the list of recommended awards is confidential, **all submitted documents will become public records** after the SGC posts this list or the solicitation is cancelled. **The SGC will not accept or retain Research Proposal Submission Packages that identify any portion as confidential.**

Solicitation Errors: If a proposer discovers any ambiguity, conflict, discrepancy, omission, or other error in the solicitation, the proposer should immediately notify the SGC of the error in writing and request modification or clarification of the solicitation. The SGC will provide modifications or clarifications by written notice to all parties who requested the solicitation, without divulging the source of the request for clarification. The SGC is not responsible for failure to correct errors.

Immaterial Defect: The SGC may waive any immaterial defect or deviation contained in a research proposal. This waiver will not modify the submission or excuse the successful research proposer from full compliance with solicitation requirements.

Disposition of Proposer's Document: Upon the posting of the recommended list of awards, all research proposals and related materials submitted in response to this solicitation will become property of the State and public records. Unsuccessful applicants who seek the return of any materials must make this request to the SGC staff listed in this solicitation.

E. AWARD NOTICES

Researchers will be notified if a research proposal is being recommended for funding as part of the SGC staff report containing research project recommendations, which will be posted online on December 10, 2018. This notification is not an authorization to begin performance of the project.

F. COMMUNICATIONS

Branding: Grant Recipients are required to use SGC and CCI names and/or logos for all published materials related to the research funded through this program. All press releases, fact sheets, talking points and press interviews related to this research must include the phrase "administered by the Strategic Growth Council and funded through the California Climate Investments," and logos should be included where applicable.

Media: Grant Recipients are required to identify a point of contact for all press inquiries and communications needs related to the project and provide the name, phone number and email address of this individual to the SGC.

Research Brief: Grant Recipients are required to prepare a two-page summary of the selected proposal, corresponding to the template provided by the SGC to be displayed on the SGC's website and used for other communications purposes.

G. PUBLIC ACCESS TO SGC-FUNDED RESEARCH

AB 2192 requires that all state-funded research projects "shall provide, for free, public access to any publication of a peer-reviewed manuscript describing state-agency-funded knowledge, a state-agency-funded invention, or state-agency-funded technology."[16] SGC will require all Climate Change Research Program funded research to submit any of the materials outlined in AB 2912 to be submitted to the Integrated Climate Adaptation and Resiliency Program's Adaptation Clearinghouse after acceptance, and no later than upon publication. The Governor's Office of Planning and Research shall make all such manuscripts publicly available through the Clearinghouse within one year of publication by the journal. Proposed research budgets are encouraged to include funding for disseminating research results and findings through an open-access publishing platform.

H. GRANT RECIPIENT ORIENTATION MEETING

Research proposals selected for funding are required to participate in a Grant Recipient orientation meeting after the grant agreement is executed. This meeting is an opportunity to review the terms of the grant agreement; to learn about expectations related to documentation and allowable costs rules that lead institutions, partners and sub-recipients must adhere to, and; to make any final refinements to the grant's work plan, schedule and budget. Specifically, SGC administrative and program staff will review:

1) Overall work plan, timeline, and budget;
2) Collaborative Structure of partners and sub-recipients being funded through the program, and Memorandum of Understanding;
3) Community engagement activities;
4) Eligible costs to be funded by the state, and any additional ineligible costs that will be funded by the Grant Recipients or partners;
5) Project accounting of funds;
6) Reporting process, including frequency and information; and
7) Project review and performance/non-performance corrective action.

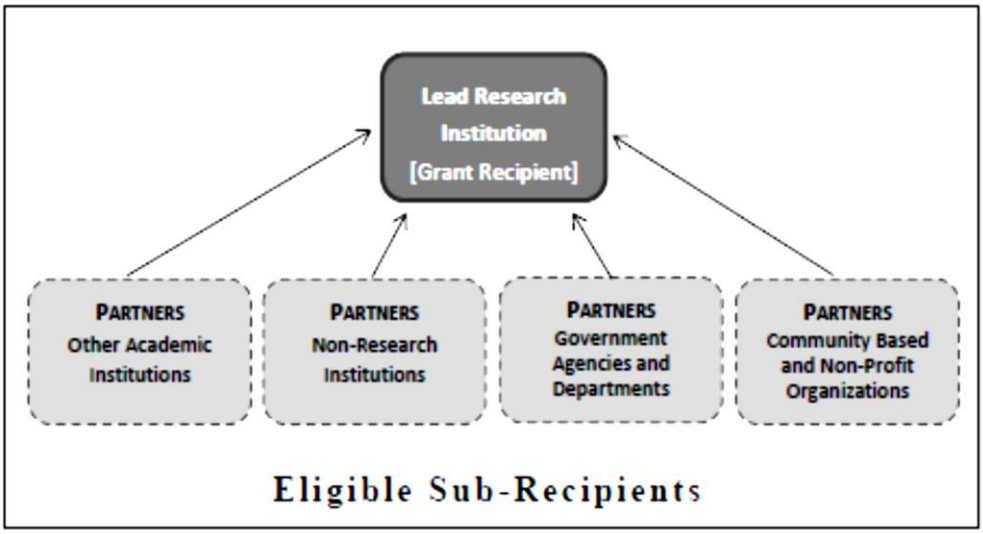
[16] http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB2192

8) Additional necessary project information or supporting documentation

I. ADMINISTRATIVE AND GRANT AGREEMENT REQUIREMENTS

Grant Agreements will be executed between the State of California (State) and the Lead Research Institution only. The Lead Research Institution is referred to as the "Grant Recipient" and Sub-Recipients will be referred to as "Partners". Diagram 1 illustrates the relationship between the Grant Recipient and Partners.

DIAGRAM 1: Grant Recipient/Partner Relationship



The Grant Recipient will be responsible for compiling and submitting all invoices and reporting documents for themselves and all Partners. Upon receipt of appropriate documentation, research funds will be paid to the Grant Recipient, which will be responsible for dispersing payment to Partners, as approved by the State.

1) Grant Agreement Execution and Term

a. Grant Agreement Execution

i) The Grant Recipient will be notified by the State if they have been selected for a Research Grant award.

ii) After Grant Recipient selection, the Grant Recipients, Partners, and State will engage in a Pre-Grant Agreement Consultation phase to finalize the agreement. The State will assist the Grant Recipient and Partners to refine the agreement and all accompanying attachments to comply with all administrative, statutory, and Climate Change Research Program requirements.

iii) After the grant agreement and attachments have been finalized, the Grant Recipient will follow provided instructions for signing all required documents. The Grant Recipient must submit all supporting materials and a signed agreement within the timeline provided in the instructions or risk forfeiting the grant award.

b. Grant Agreement Term

i) The grant agreement term begins on the day the State and the Grant Recipient have both signed the completed agreement. The State will notify the Grant Recipient and Partners when work may proceed.

ii) The end of the grant agreement term will be determined by the State based on the availability of funds and the administrative requirements for liquidation. The agreement term is approximately three years from the date of proposal selection, unless extended. No grant agreement will go past March 31, 2022, under any circumstances.

2) Payment and Accounting of Grant Funds

a. Grant funds cannot be disbursed until the grant has been fully executed.
b. Only approved and eligible costs incurred during the grant term will be reimbursable.
c. On a quarterly basis, the Grant Recipient will submit project invoices to the SGC.
d. Before submitting to the SGC, the Grant Recipient will be responsible for compiling all supporting documentation from Partners for a specific time-period. Invoices without adequate supporting documentation for all costs will not be paid.
e. Supporting documentation may include, but is not limited to: purchase orders, receipts, progress payments, subcontractor invoices, time cards, etc.
f. Each invoice must be accompanied by appropriate quarterly reporting materials.
g. Payments are made on a reimbursement basis; advance payments are not allowed. The Grant Recipient and Partners must have adequate cash flow to pay all grant-related expenses prior to requesting reimbursement from the SGC.
h. The disbursement process and acceptable forms of supporting documentation will be finalized during the Pre-contract Consultation.
i. Final invoices will be due to the SGC no later than 30 days after the end of the grant agreement term.

Per State of California policy, the SGC will withhold ten percent of all direct costs from each task to be reimbursed with Climate Change Research Program funds until the task is completed, and deliverables are received by the SGC. Indirect costs will be reimbursable, only if they comply with the direction provided in the program's Research Investment Plan. Refer to the definitions listed in Section IV C.

J. REPORTING, REVIEW AND PERFORMANCE

1) Reporting Requirements

The Grant Recipient will be subject to the following reporting requirements:

a. California Air Resources Board (CARB): The Grant Recipients must adhere to the reporting requirements outlined by CARB in the Funding Guidelines to Agencies that Administer California Climate Investments.[17]

b. Progress Reports: The Grant Recipient must provide regular progress reports regarding the implementation of the approved research plan. Reporting will include, but is not limited to:

i) ***Quarterly progress updates***. A template format that allows the Grant Recipient to report on the percentage of work completed and the percentage of budget spent in relation to the approved research plan and budget. Additionally, requests information about any project challenges, opportunities or news occurring within a specific time period.

[17] Funding Guidelines for Administering Agencies. California Air Resources Board. https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/fundingguidelines.htm

ii) ***Annual progress reports.*** The Grant Recipient is responsible to submit an annual narrative that features an in-depth discussion detailing how the research is advancing the program objectives:
- facilitating GHG emissions reductions in California
- building innovative, outcome-driven partnerships with State agencies, local and regional communities, organizations within disadvantaged and low-income communities, and/or key stakeholders
- delivering major economic, environmental, or public health benefits for Californians, including meaningful benefits to the most disadvantaged and low-income communities

iii) ***A final report***. Summarizing key findings, accomplishments and deliverables completed during the grant term.

All data and reports must be presented to the SGC in a format that can be posted to program website and data tools. Reporting templates will be finalized prior to executing the grant agreement.

2) Review and Performance

a. Review and Audit Procedures

The State has the right to review project records, conduct audits, and perform site visits during the Grant Agreement Term. This right shall extend to all Partners and subcontractors, and the Grant Recipient shall include provisions ensuring such access in all contracts or subcontracts.

The Grant Recipient must have the proposal records, including the source documents and evidence of payment, readily available, and provide an employee with knowledge of the project to assist the auditor.

Grant Recipients need to maintain copies of project records for at least four (4) years after the "Project Closeout" report or final report is submitted.

b. Accounting Requirements

The Grant Recipient must maintain an accounting system that:

i) Accurately reflects fiscal transactions, with the necessary controls and safeguards;

ii) Provides a good audit trail, including original source documents such as purchase orders, receipts, progress payments, invoices, time cards, canceled checks, etc.; and

iii) Provides accounting data so the total cost of each individual proposal can be readily determined.

c. Remedies for Non-Performance

The State has the discretion to determine if the Grant Recipient or Partners have performed in accordance with program requirements, the grant agreement, or any other legally binding agreements. Examples of non-performance include but are not limited to: misuse of funding for ineligible expenses, failure to comply with program guidelines or requirements, inability to meet performance requirements or schedule milestones, and failure to comply with the terms and conditions identified in legal agreements governing the grant award.

If the State determines that the Grant Recipient or Partners have not performed in accordance with program requirements, the grant agreement, or any other legally binding agreements governing the grant award, the Grant Recipient will be notified and provided instructions and a timeline to rectify all cases of non-performance. The State may withhold any payments due the Grant Recipient until the Grant Recipient brings the project back into full compliance. Should the Grant Recipient or Partners fail to come back into compliance, the State may terminate the grant agreement or any other legally binding agreement governing the grant award at any time upon 30 days of written notice to the Grant Recipient.

K. RECORDS RETENTION

Proposal records must be retained for a period of four (4) years after final payment is made by the State. All proposal records must be retained by the Grant Recipient at least one (1) year following an audit. Grant Recipients are required to keep source documents for all expenditures related to each grant for at least four (4) years following proposal completion and one year following an audit. A proposal is considered complete upon receipt of final grant payment from the State.

L. TERMS AND CONDITIONS

Each grant agreement resulting from this solicitation will include terms and conditions that set forth the recipient's rights and responsibilities. By signing the Submission Questionnaire (Attachment 1), each proposer agrees to enter into an agreement with the SGC to conduct the proposed project according to the terms and conditions that correspond to its organization, without negotiation: (1) University of California/California State University terms and conditions; (2) U.S. Department of Energy terms and conditions; or (3) standard terms and conditions. Find more information at http://www.dgs.ca.gov/ols/Resources/StandardContractLanguage.aspx. Failure to agree to the terms and conditions by taking actions such as failing to sign the Submission Questionnaire or indicating that acceptance is based on modification of the terms will result in rejection of the proposal. Applicants must read the terms and conditions carefully. The SGC reserves the right to modify the terms and conditions prior to executing grant agreements.

M. CALIFORNIA SECRETARY OF STATE REGISTRATION

All corporations, limited liability companies (LLCs), limited partnerships (LPs) and limited liability partnerships (LLPs) that conduct intrastate business in California are required to be registered and in good standing with the California Secretary of State prior to its research proposal being recommended for approval at an SGC Public Meeting. If not currently registered with the California Secretary of State, Lead Research Institutions, partners and sub-recipients are encouraged to contact the Secretary of State's Office as soon as possible to avoid potential delays in beginning the proposed project(s) (should the Research Proposal be successful). For more information, contact the Secretary of State's Office via its website at www.sos.ca.gov. Sole proprietors using a fictitious business name must be registered with the appropriate county and provide evidence of registration to the SGC prior to their project being recommended for approval at an SGC Public Meeting.

APPENDIX A: KEY WORDS/TERMS

Word/Term	Definition
Administrative Contact	The individual responsible for any administrative duties related to the proposed project(s).
Agreement Manager	The State's representative designated by the Strategic Growth Council to oversee the performance of an agreement resulting from this solicitation and to serve as the main point of contact for the Recipient.
Applicant	The respondent to this solicitation.
Authorized Financial Contact	The individual responsible for any financial, accounting, or invoicing related inquiries.
Authorized Official	The individual with the authority to sign a contract or grant that makes it a legal binding agreement between the State and their entity.
CalEnviroScreen[18]	The screening methodology used by all funding awarded through the California Climate Investments to identify California communities that are disproportionately burdened by multiple sources of pollution (classified as a disadvantaged community). The latest available version of the tool at the time of this solicitation is version 3.0.
CBO	Community Based Organizations.
CCI	California Climate Investments, the overarching funding program, administered by the California Air Resources Board, responsible for managing funds allocated from the proceeds of the State's Cap and Trade Auctions.
Contracts Manager	The individual responsible for satisfying the defined business and scientific objectives of the project.
Cost-reimbursement Award	The type of grant agreement that the State of California executes to fund grant awards. It specifies that the State agrees to reimburse the Grant Recipient for work performed and/or costs incurred by the Grant Recipient up to the total amount specified in the grant. Such costs must be allowable in accordance with the applicable cost principles. Accountability is primarily based on technical progress, financial accounting and fiscal reporting. Except under certain programs and under special circumstances, SGC grants and cooperative agreements are normally cost-reimbursement type awards.
Days	Days refers to calendar days.
Disadvantaged Community	These communities are identified by census tracts that rank high on a combination of metrics gauging pollution burden and vulnerability, as defined and implemented by the latest version of CalEnviroScreen. For more information, see the Greenhouse Gas Reduction Fund Investment Plan and Communities Revitalization Act (Health and Safety Code § 39500 – 39944.[11]
Equipment Purchasing	Equipment is an item exceeding $5,000 or more per unit cost and has a tangible useful life of more than one year. The cost to lease *equipment to use* in the grant proposal may be

[18] OEHHA Site for CalEnviroScreen 3.0 https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30

Word/Term	Definition
	charged to the grant. Use of equipment owned by the grantee may be charged to the grant at a rate set by the California Department of Transportation's "Labor Surcharge and Equipment Rental Rate" guide (http://www.dot.ca.gov/hq/construc/equipmnt.html). Purchase of equipment using grant funds is allowable only with prior approval by the SGC. A cost-benefit analysis to justify the cost of purchasing equipment versus leasing must be provided. Procurement of equipment must be done on a competitive basis and include documentation of price analysis. The grantee must include in the application package the proposed use and maintenance plans for equipment after the performance period of the grant. Disposition of equipment beyond the proposal performance period is subject to SGC approval. If the grantee fails to complete the grant and/or dissolves during the grant, equipment shall be returned to SGC. Equipment shall not be used as collateral or other means.
Grant Agreement	A legal instrument of financial assistance between the State and a Grant Recipient.
Grant Recipient	The recipient of a grant award under this solicitation.
Low-Income Community	As specified in Assembly Bill 1550[3] (2016, Gomez) and codified in the Greenhouse Gas Reduction Fund Investment Plan and Communities Revitalization Act (Health and Safety Code § 39500 - 39944[19]: 1) a household income at or below 80 percent of the statewide median income, or 2) a household income at or below the threshold designated as low-income by HCD's list of 2016 State Income Limits Low-income threshold by county and household size are available on ARB's disadvantaged and low-income communities investments web page, https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/communityinvestments.htm
Low Income Households	As specified in Assembly Bill 1550[20] (2016, Gomez), census tracts that are either at or below 80 percent of the statewide median income, or at or below the threshold designated as low-income by the California Department of Housing and Community Development's (HCD) 2016 State Income Limits[21].
Non-traditional Research Partners	Project partners (see below) not affiliated with a research institution. Examples of possible non-traditional research partners include, but are not limited to: Community-based organizations – including civic, community, and advocacy groups; Federal research agencies and departments – such as NOAA, USGS, etc.; Local land use agencies, departments, and organizations; Local health agencies, departments, and organizations; Non-profit organizations – including conservation, environmental justice and natural resources; Open space landowners and recreation providers; Private sector businesses; Regional agencies – focused on transportation, resources, and infrastructure; Regional climate collaboratives, and; Tribes.

[19]http://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=HSC&division=26.&title=&part=2.&chapter=4.1.&article=

[20] AB 1550: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB1550

[21] HCD - State Income Limits for 2016: http://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits/docs/inc2k16.pdf

Word/Term	Definition
Partners	An organization, institution or individual that is associated with the proposed research but not affiliated with the Lead Research Institution. The association can provide complementary expertise and skills to the research, expand collective capacity among stakeholders, and create collaborative knowledge sharing while meeting time, inquiry and funding commitments. Partners can include sub-recipients.
Principal Investigator	The lead researcher designated in the proposal and approved by the Research Institution to conduct the proposed research. This individual is responsible for the scientific or technical direction of the project. The SGC does not infer any distinction in scientific stature among multiple PIs, whether referred to as PI or co-PI. If more than one, the first one listed will serve as the contact PI, with whom all communications between SGC staff and the project relating to the scientific, technical, and budgetary aspects of the project should take place. The PI and any identified co-PIs, however, will be jointly responsible for submission of the requisite project reports. In most instances, the Principal Investigator and the Project Manager will be the same person; however, a research proposal may include both roles.
Project Manager	Also known as the Primary Investigator, this person is designated in the proposal submission package to oversee the project and serve as the main point of contact for the Strategic Growth Council.
Project Partner	An entity or individual that contributes to the successful completion of a research grant project. Partners can be a recipient of funding on the project budget.
Research Investment Plan	The document that outlines program goals, research priorities, program structure, program review and award process, and other administrative items.
Research Proposal	An applicant's formal written response to this solicitation.
SGC	Strategic Growth Council – the administrative and implementing authority for program funds.
Solicitation	This entire document, including all attachments and exhibits ("solicitation" may be used interchangeably with "Grant Funding Opportunity").
State	State of California.
Sub-recipient	A sub-recipient is an additional research department or contractor that is identified in the project proposal as providing a service or product to the completion of the proposed research.

APPENDIX B: APPLICABLE LAWS, POLICIES AND BACKGROUND DOCUMENTS

Laws/Regulations

- *Assembly Bill 32 (Nunez) - Global Warming Solutions Act of 2006*
  AB 32 created a comprehensive program to reduce greenhouse gas (GHG) emissions in California. GHG reduction strategies include a reduction mandate of 1990 levels by 2020 and a cap-and-trade program. AB 32 also required the California Air Resources Board (ARB) to develop a Scoping Plan that describes the approach California will take to reduce GHGs. ARB must update the plan every five years.
  Additional information: http://www.arb.ca.gov/cc/ab32/ab32.htm
  Applicable Law: California Health and Safety Code §§ 38500 et. seq.

- *Assembly Bill 1383 (Lara) – Short-lived Climate Pollutants: Methane Emissions: Dairy and Livestock: Organic Waste: Landfills.*
  AB 1383 required the ARB to approve and begin implementing the comprehensive strategy to reduce short-lived Climate Pollutants in the State to achieve, from 2013 levels, a 40% reduction in methane, a 40% reduction in hydrofluorocarbon gases, and a 50% reduction in anthropogenic black carbon, by 2030.
  Additional information: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB1383

- *Assembly Bill 1482 (Gordon) – Climate Adaptation Strategy*
  AB 1482 requires the California Natural Resources Agency (CNRA) to update the state's climate adaptation strategy by July 1, 2017, and every 3 years thereafter. As part of the update, the CNRA will coordinate with other state agencies to identify the agency or agencies to lead adaptation efforts in each sector. The updates to the plan are to include climate change vulnerabilities by sector and the priority actions needed to reduce risks, for at least the following sectors: water, energy, transportation, public health, agriculture, emergency services, forestry, biodiversity and habitat, ocean and coastal resources.
  Additional information: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160AB1482

- *Senate Bill 32 (Pavley) - State Targets for Climate Pollution*
  SB32 requires the state board to ensure that statewide greenhouse gas emissions are reduced to 40% below the 1990 level by 2030
  Additional information: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32

- *Senate Bill 246 (Wieckowski) - Climate Adaptation*
  SB 246 establishes an Integrated Climate Adaptation and Resiliency Program for California in the Office of Planning and Research (OPR) to coordinate regional and local efforts with state climate adaptation strategies and to adapt to the impacts of climate change. SB 246 emphasizes climate equity considerations across sectors and regions and strategies that benefit both GHG emissions reductions and adaptation efforts, in order to facilitate the development of holistic, complimentary strategies for adapting to climate change impacts. The bill also requires the Office of Emergency Services, in coordination with the CNRA and OPR, to update the state's Adaptation Planning Guide, "Safeguarding California", to provide tools and guidance to local governments in implementing climate adaptation and climate resiliency projects.
  Additional information: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB246

- *Senate Bill 1386 (Wolk) - Resource Conservation: Working and Natural Lands*
  SB 1386 establishes State policy making natural and working lands conservation and management a key strategy for meeting the State's greenhouse gas emissions reduction goals, resulting in a variety of outcomes that contribute to carbon sequestration and delivers multiple public benefits. It requires that all state agencies, departments, boards, and commissions consider this policy when revising, adopting, or establishing policies,

regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands.
Additional information: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1386

Policies/Plans

- *Climate Change Research Plan for California (2015)*
  Developed by the Climate Action Team's Research Working Group, this Plan presents priorities for the next 3 - 5 years for policy-relevant, California-specific research.
  Additional information:
  http://www.climatechange.ca.gov/climate_action_team/reports/CAT_research_plan_2015.pdf

- *Final 2017 Update – California's Climate Change Scoping Plan (2017)*
  The California Air Resources Board is required to regularly update the State's Climate Change Scoping Plan, describing California's approach to reducing emissions to 40 percent below 1990 levels by 2030. This latest plan update articulates the State's strategy; building on past successes, strengthening major carbon mitigation programs, and further integrating efforts to reduce GHGs and air pollution.
  Additional Information:https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

- *Vibrant Communities and Landscapes and Potential State-Level Strategies to Advance Sustainable, Equitable Communities and Reduce Vehicle Miles of Travel (Appendix C of the Scoping Plan, 2017)*
  An interagency vision for land use, and for discussion, Potential State-Level Strategies to Advance Sustainable, Equitable Communities and Reduce Vehicle Miles of Travel (VMT).
  Additional information: https://www.arb.ca.gov/cc/scopingplan/2030sp_appc_vmt_final.pdf

- *Safeguarding California Plan: 2018 Update – California's Climate Adaptation Strategy (2018)*
  This plan serves as the State's roadmap for everything state agencies are doing and will do to protect communities, infrastructure, services, and the natural environment from climate change impacts. It features a strategy that covers programmatic and policy responses across different policy areas, and discusses ongoing related work that coordinates local and regional adaptation action with developments in climate impact science.
  Additional information: http://resources.ca.gov/climate/safeguarding/#safeguard

- *Executive Order B-30-15 (2015)*
  Governor Brown's Executive Order B-30-15 established a new interim statewide greenhouse gas emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030, to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050.
  Additional information: https://www.gov.ca.gov/2015/04/29/news18938/

- *Executive Order B-48-18 (2018)*
  Executive Order B-48-18 implements Governor Brown's call for state entities to work with the private sector and all appropriate levels of government to put at least 5 million ZEVs on California roads by 2030, and to continue partnering with regional and local governments to streamline ZEV infrastructure installation processes wherever possible.
  Additional information: https://www.gov.ca.gov/2018/01/26/governor-brown-takes-action-to-increase-zero-emission-vehicles-fund-new-climate-investments/

- *Executive Order B-55-18 (2018)*
  Governor Brown's Executive Order B-55-18 established a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This

goal is in addition to the existing statewide targets of reducing greenhouse gas emissions.
Additional information: https://www.gov.ca.gov/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf

Research References

Refer to the links below for information about past Climate Change research projects and activities funded by the State:

- Cal-Adapt's Research Catalog: http://v1.cal-adapt.org/research/
- California Air Resources Board's Research Catalog: https://www.arb.ca.gov/research/projects.htm
- California Department of Food and Agriculture's Office of Environmental Farming and Innovation: https://www.cdfa.ca.gov/oefi/
- California Department of Health's Climate Change and Health Equity Program: https://www.cdph.ca.gov/Programs/OHE/Pages/CCHEP.aspx
- California Energy Commission's Research and Development Web Page http://www.energy.ca.gov/research/
- Caltrans Division of Research, Innovation and System Information's Data Library: http://www.dot.ca.gov/drisi/library.html
- 4th California Climate Change Assessment: http://resources.ca.gov/climate/safeguarding/research/

ATTACHMENT 1: RESEARCH PROPOSAL QUESTIONNAIRE

The method of delivery for responding to the Climate Change Research Program solicitation is through the Department of Water Resources' Grants Review and Tracking System (GRanTS), a web-based grants application tool, available at: https://www.water.ca.gov/Work-With-Us/Grants-And-Loans/GRanTS/. This online tool allows proposers to submit their electronic documents to the SGC. Electronic files must be in Microsoft Word XP (.pdf format) and Excel Office Suite formats. Attachments requiring signatures may be scanned and submitted in PDF format.

This attachment provides the information that proposers are required to complete in the Submission Questionnaire. The first two sections of the questionnaire are pages that are required by the GRanTS tool.

Proposers only need to complete the information highlighted in sections I and II to satisfy the requirements of the application platform.

Section I - Applicant Information Page: This section asks for basic information about the applicant and the lead Research Institution.

Question	Answer Type	Answer Options				Required Field?
APPLICANT INFORMATION						
Organization Name	Dropdown					X
Point of Contact	Drop Down	Existing User	Add new user			X
Point Of Contact Position Title	Text Box	50 characters				X
Proposal Name	Text Box	150 characters				X
Proposal Objective	Text Box	2000 characters				X
BUDGET						
Other Contribution	Number Box					
Local Contribution	Number Box					
Federal Contribution	Number Box					
In-kind Contribution	Number Box					
Amount Requested	Number Box					X
Total Proposal Costs	Number Box					X
GEOGRAPHIC INFORMATION (for GEO information, visit https://www.census.gov/geo/maps-data/data/geocoder.html)						
Latitude	Number Box	DD(+/-)	MM	SS		X
Longitude	Number Box	DD(+/-)	MM	SS		X
Longitude/Latitude Clarification	Text Box	250 characters				
Location	Text Box	100 characters				
County	Drop Down	CA Counties				X

Ground Water Basin	Drop Down	Basins		
Hydrologic Region	Drop Down	Regions		
Watershed	Text Box	250 characters		
LEGISLATIVE INFORMATION (for LEG information, visit http://findyourrep.legislature.ca.gov/ and https://www.govtrack.us/)				
Assembly District	Drop Down	Districts		**X**
Senate District	Drop Down	Districts		**X**
US Congressional District	Drop Down	Districts		**X**

Section II – Research Proposal Information: This section is another mandatory page on the tool. Users may use the address of the Research Institution rather than a project location to complete the mandatory questions in this section.

Question	Answer Type	Answer Options				Required Field?
PROJECT INFORMATION						
Project Name	Text Box	150 characters				**X**
Implementing Organization	Drop Down					
Secondary Implementing Org.	Text Box	125 characters				
Proposed Start Date	Date Box	dd/mm/yyyy				
Proposed End Date	Date Box	dd/mm/yyyy				
Scope of Work	Text Box	500 characters				
Project Description	Text Box	2000 characters				
Project Objective	Text Box	500 characters				
PROJECT BENEFIT INFORMATION						
Benefit Level	Drop Down	Primary/ Secondary	Tertiary/ Quaternary	Quniary	Septary	
Benefit Type	Drop Down	Research/ Planning				
Benefit	Drop Down	Clean Air (only)				
Description	Text Box	2000 characters				
Measurement	Number Box					
BUDGET (copies budget data from the Application Page)						
Other Contribution	Number Box					
Local Contribution	Number Box					
Federal Contribution	Number Box					
In-kind Contribution	Number Box					
Amount Requested	Number Box					**X**
Total Proposal Costs	Number Box					**X**
GEOGRAPHIC INFORMATION (copies geographic data from the Application Page)						
Latitude	Number Box	DD(+/-)	MM	SS		**X**
Longitude	Number Box	DD(+/-)	MM	SS		**X**
Longitude/Latitude Clarification	Text Box	250 characters				

Location	Text Box	100 characters		
County	Drop Down	CA Counties		X
Ground Water Basin	Drop Down	Basins		
Hydrologic Region	Drop Down	Regions		
Watershed	Text Box	250 characters		
LEGISLATIVE INFORMATION (copies legislative data from the Application Page)				
Assembly District	Drop Down	Districts		X
Senate District	Drop Down	Districts		X
US Congressional District	Drop Down	Districts		X

Proposers must complete all required fields *(indicated with an "X" under the required fields column)* ***for each of the remaining sections*** *(III through VII)* ***to successfully submit a Research Proposal Package.***

Section III – Research Proposal Summary: This page features an abstract of the proposed work and identifies specific information such as the project type, the research team, and information that categorizes the type of work being proposed.

Question	Answer Type	Answer Options		Required Field?
RESEARCH PROPOSAL ABSTRACT: The Research Proposal Abstract must not be more than 3500 characters (approximately one page) in length and must clearly address in separate statements: (1) an overview of the proposal and project(s) included; (2) a summary of the commercialization pathway for the proposed project(s); and (3) a clear description of how the proposed project(s) supports the Strategic Growth Council's (SGC) mission to support sustainable, equitable, and resilient community development in California. The overview should include a description of the activity that would result if the proposal were funded and a statement of objectives and methods to be employed. The commercialization pathway plan should outline potential barriers to development and commercialization and strategies to overcome those barriers. The description of how the proposed project supports SGC's mission should describe how the proposed technology will help California promote sustainability, economic prosperity, and quality of life for low-income and disadvantaged communities, or populations that are vulnerable to the impacts of climate change. The abstract should be written in the third person, informative to other persons working in the same or related fields, and, insofar as possible, understandable to a scientifically or technically literate lay reader.				
Provide a project abstract:	Text Box	3,500 characters		X
PRINCIPAL INVESTIGATOR: The individual responsible for the scientific or technical direction of the project. All Project Leads and co-Project Leads are expected to have significant intellectual input to the project. The Project Lead directs the project and is responsible for submission of the requisite project reports.				
Principal Investigator's Name	Text Box	30 characters		X
Principal Investigator's Title	Text Box	50 characters		X
Principal Investigator's Address (Institution, Department, Street Address, City, State, ZIP)	Text Box	50 characters		X
Principal Investigator's Telephone Number	Text Box	10 characters		X
Principal Investigator's Email Address	Text Box	90 characters		X

CONTRACTS MANAGER (CM): The individual responsible for satisfying the defined business and scientific objectives of the project (optional).				
Contracts Manager's Name	Text Box	30 characters		**X**
Contracts Manager's Title	Text Box	50 characters		**X**
Contracts Manager's Address (Institution, Department, Street Address, City, State, ZIP)	Text Box	50 characters		
Contracts Manager's Telephone Number	Text Box	10 characters		
Contracts Manager's Email Address	Text Box	90 characters		
AUTHORIZED OFFICIAL: The individual with the authority to sign a contract or grant that makes it a legal binding agreement for their entity.				
Authorized Official's Name	Text Box	30 characters		**X**
Authorized Official's Title	Text Box	50 characters		**X**
ADMINISTRATIVE CONTACT: The individual responsible for any administrative duties related to the proposed project(s).				
Administrative Contact's Name	Text Box	30 characters		**X**
Administrative Contact's Title	Text Box	50 characters		**X**
AUTHORIZED FINANCIAL CONTACT: The individual responsible for any financial, accounting, or invoicing related inquiries.				
Authorized Financial Contact's Name	Text Box	30 characters		**X**
Authorized Financial Contact's Title	Text Box	50 characters		**X**
PROJECT DURATION: The anticipated number of months to complete the proposed research				
Number of months to conduct and closeout the research project.	Text Box	25 characters		**X**
FUNDING REQUEST: Note the amount being requested for performing this research.				
Funding being requested to conduct this research	Text Box	25 characters		**X**
MATCH FUNDING: If applicable, note the amount and percentage of total budget that will be committed as match funding for performing this research.				
Committed match funding to conduct this research	Text Box	25 characters		
RESEARCH INNOVATION FIELDS: Identify which one of the research innovation fields described in the Round 2 Solicitation is the primary emphasis of this proposal (one answer required).				

Identify the primary research innovation field that is addressed in this research:	Drop Down Box	(1) Carbon Dioxide Removal	(2) Methane Reduction	(3) Heating, Cooling, and Thermal Storage		**X**
INVESTMENT OBJECTIVES: The Council approved funding for this program to be directed to research that supports the Governor's Climate Change Technology and Solutions Initiative. This Initiative has four objectives. Investments should demonstrate potential to significantly reduce GHG emissions and should be easily replicable and scalable. Awardees projects or portfolio of projects should provide a holistic approach towards addressing one or more of the identified research innovation fields. Research Institutions should build strong and meaningful partnerships with the research and academic communities, private sector, and community-based organizations. Finally, Research Institutions should ensure that innovative technologies have direct and indirect benefits to low-income and/or disadvantaged communities. Below, please note how this research aligns with the Initiative's objectives:						
Check that the proposal addresses each of the following objectives:	Check Box for each (Yes, No)	Scalable and replicable carbon emissions reductions	Holistic approach	Meaningful partnerships	Benefits to low-income and/or disadvantaged communities	**X**
LOCATION: Confirm that the following research components will occur in California:						
Lead Institution is Housed in CA.	Check Box	Yes	No			**X**
Any study areas or pilot will be located in CA.	Check Box	Yes	No	N/A		**X**
INDIRECT COST RATE (ICR): Identify if this research proposal is using the maximum allowable ICR of a 25% Modified Total Direct Cost Base. If the research proposal is using a different rate, please check other and describe (1) the rate being used and (2) the State agency or department that has negotiated the alternative rate with the research institution.						
This project is using the following Indirect Cost Rate:	Drop Down Box	(1) 25% MTDC	(2) Other			**X**
If Other:						
List the alternative ICR that will be used.	Text Box	50 characters				
Name the State agency or department that has established this rate with your research institution.	Text Box	50 characters				

Section IV – Threshold Requirements: This page asks the Researcher to describe how the proposed research meets the program's threshold requirements.

Question	Answer Type	Answer Options				Required Field?
Proposal Managing Requirement: The SGC requires that a specific individual—whether it be a Lead PI, project manager, or other researcher—must have a substantial role in managing and implementing the proposed research and development (more than 80% of available time on their project(s)). This individual will serve as the manager of the entire project portfolio and the main point of contact.						
Please indicate who will fulfill the proposal managing requirement as outlined in Section IV A of the Solicitation.	Drop Down Box	Principal Investigator	Contracts Manager	Authorized	Administrative	**X**

				Official	Contact	
		Authorized Financial Contact	Other			
If other, please provide the contact information for the individual who will manage the proposal and will ultimately be held accountable for the proposal's outcomes. This information should include the following: Name, Title, Affiliation, Address, Phone, and Email	Text Box	500 characters				
GHG EMISSIONS REDUCTION: Discuss how the proposed project or portfolio of projects will demonstrate potential for significant greenhouse gas (GHG) emission reductions, as well as how the project(s) can be scaled and replicated. Proposers should also provide a high-level, quantifiable estimate for GHG emission reductions.						
The proposed project(s) reduce greenhouse gas emissions.	Check Box	Yes	No			**X**
Discuss the amount of GHG emissions reduction this project or portfolio of projects will likely achieve, describing the type(s) of gases and expected measurable reduction(s).	Text Box	500 characters				**X**
The proposed project(s) can be scaled and replicated outside of California.	Check Box	Yes	No			**X**
Discuss how this investment will help the proposed project(s) achieve scalability and replicability	Text Box	500 characters				**X**
ADDRESSES BENEFITS TO DISADVANTAGED OR LOW-INCOME COMMUNITIES: Utilizing the definitions for these communities listed in Appendix A of the solicitation (specified in Chapter 4.1. of the Health and Safety Code § 39719, the Greenhouse Gas Reduction Fund Investment Plan and Communities Revitalization Act), discuss how the application this technology to these communities could result in direct and indirect benefits to a community's residents and or businesses. Quantifiable measures are not required here, but the response should include a description of how the research will consider and respond to potential benefits for these communities.						
This proposal could provide benefits to low-income households, low-income communities or disadvantaged communities as defined in chapter 4.1 of the Health and Safety Code, the Greenhouse Gas Reduction Fund Investment Plan and Communities Revitalization Act. https://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=HSC&division=26.&title=&part=2.&chapter=4.1.&article	Check Box	Yes	No			**X**
Discuss how the technology could benefit low-income or disadvantaged communities:	Text Box	1,000 characters				**X**
If applicable, describe how the technology can provide benefits to vulnerable populations that will need to adapt to the impacts of climate change.	Text Box	1,000 characters				
PROGRAM GOALS: Confirm that the proposed project(s) contribute holistically to the all of the seven program goals defined in the Research Investment Plan and the Program's Grant Solicitation.						
The proposed research aligns with all of the seven goals identified in the Climate Change Research Program's Research Investment Plan (http://sgc.ca.gov/programs/climate-research/docs/20181003-Approved-Research_Investment_Plan.pdf).	Check Box	Yes	No			**X**

Briefly discuss how the research proposal advances the Climate Change Research Program's seven Program Goals:	Text Box	1,500 characters				**X**
TECHNOLOGY ADVANCEMENT PLAN: Using the US Department of Energy's Technology Readiness Level (TRL), identify how the proposed work will advance at least one aspect of the technology's research and development process, and progress to a minimum of TRL 7 by the end of the grant period. A guide to TRLs can be found here: https://www.directives.doe.gov/directives-documents/400-series/0413.3-EGuide-04/@@images/file.						
The proposed technology can reach TRL 7 by the end of the grant period.	Check Box	Yes	No			X
Provide a summary of the proposals technology advancement plan:		500 characters				X
COMMERCIALIZATION PLAN: Identify specific services or resources that will be made available to develop a formal commercialization plan that complements the proposed technology development plan. Applicants do not need complete commercialization plans as part of their proposal but should explain the strategy for developing plans and how commercialization progress will be assessed. Also, briefly discuss the proposal's approach to engaging members of community, decision makers, and other stakeholders in order to shape the technology-to-market plan.						
The proposed technology demonstrates a clear path forward for commercialization and adoption, particularly in low-income and disadvantaged communities.	Check Box	Yes	No			X
Describe up to three (3) key elements of the proposal's commercialization plan for low-income and disadvantaged communities:	Text Box	750 characters				X

Section V - Collaborations**:** *In this section, proposers will identify key actors from different sectors that will serve as partners in the proposal.* The Climate Change Research Program will prioritize projects that demonstrate robust and meaningful partnerships with a diverse set of entities, including research institutions; philanthropic entities; federal, state, and local governments; community based organizations; and for-profit institutions. Successful collaborations are established partnerships that have a track record of supporting research and development that provides benefits to low-income and disadvantaged communities and advancing the State's climate goals. Community-based organizations can assist with ensuring that innovations reach target audiences of low-income and disadvantaged communities. Private-sector businesses can assist with developing plans for market viability. Governments, particularly local, can assist with policy issues with implementation.

Question	Answer Type	Answer Options			Required Field?
ESTABLISHED COLLABORATIVE PARTNERSHIP TEAM: A team of individuals representing a multi-sector group of organization with a history of working together, that is partnering on this proposal to advance technology or the application of existing technology that furthers the State's climate goals and provides benefits to disadvantaged and low income communities					
The proposal includes an established collaborative partnership team, comprised of the organizations/individuals indicated below	Check Box	Yes	No		X
Discuss specifics about the establishment of this team and past collaborative works/efforts.	Text Box	250 characters			X
COMMUNITY PARTNER: A community-based organization participating in this project that will supply a letter of support for this submission identifying (1) the degree of participation and (2) any support being provided to the project.					
Name of the Partnership Organization or Institution:	Text Box	30 characters			X

Describe the roles/responsibilities of this partner in the proposed research:	Text Box	250 characters		X
Community Partner: Contact Person's Name:	Text Box	30 characters		X
Community Partner: Contact Person's Title:	Text Box	50 characters		X
Community Partner: Contact Person's Telephone Number:	Text Box	15 characters		X
Community Partner: Contact Person's Address (street number and street name or PO Box, City, State, ZIP):	Text Box	100 characters		X
Community Partner: Contact Person's Email Address:	Text Box	90 characters		X
BUSINESS PARTNER: A for-profit business participating in this project that will supply a letter of support for this submission identifying (1) the degree of participation and (2) any support being provided to the project.				
Name of the Partnership Organization or Institution:	Text Box	30 characters		X
Describe the role/responsibilities of this partner in the proposed research:	Text Box	250 characters		X
Business Partner: Contact Person's Name:	Text Box	30 characters		X
Business Partner: Contact Person's Title:	Text Box	50 characters		X
Business Partner: Contact Person's Telephone Number:	Text Box	15 characters		X
Business Partner: Contact Person's Address (street number and street name or PO Box, City, State, ZIP):	Text Box	100 characters		X
Business Partner: Contact Person's Email Address:	Text Box	90 characters		X
PUBLIC PARTNER: A federal or local government participating in this research that will supply a letter of support for this submission identifying (1) the degree of participation and (2) any support being provided to the project. California State Agencies are prohibited from submitting a letter of support but are encouraged to partner with applicants.				
Name of the Partnership Organization or Institution:	Text Box	30 characters		X
Describe the role/responsibilities of this partner in the proposed research:	Text Box	250 characters		X
Public Partner: Contact Person's Name:	Text Box	30 characters		X
Public Partner: Contact Person's Title:	Text Box	50 characters		X
Public Partner: Contact Person's Telephone Number:	Text Box	15 characters		X

Public Partner: Contact Person's Address (street number and street name or PO Box, City, State, ZIP):	Text Box	100 characters		X
Public Partner: Contact Person's Email Address:	Text Box	90 characters		X
ADDITIONAL PARTNER: Any additional institutions or organizations participating in this research that will supply a letter of support for this submission identifying (1) the degree of participation and (2) any support being provided to the project.				
Name of the Partnership Organization or Institution:	Text Box	30 characters		
Describe the role/responsibilities of this partner in the proposed research:	Text Box	250 characters		
Additional Partner: Contact Person's Name:	Text Box	30 characters		
Additional Partner: Contact Person's Title:	Text Box	50 characters		
Additional Partner: Contact Person's Telephone Number:	Text Box	15 characters		
Additional Partner: Contact Person's Address (street number and street name or PO Box, City, State, ZIP):	Text Box	100 characters		
Additional Partner: Contact Person's Email Address:	Text Box	90 characters		

Section VI – Terms and Conditions: Awarded institutions are required to review and agree to the following requirements governing the execution of a research project and the administration of the grant.

Question	Answer Type	Answer Options			Required Field?
CONFIDENTIALITY: The proposing research institution understands that though the entire evaluation process from receipt of applications up to the posting of the SGC staff's recommended list of projects is confidential, all submitted documents will become public records after the Council awards funding to research projects or if the solicitation is cancelled. The SGC will not accept or retain applications that identify any portion as confidential.					
Check here to indicate that the proposer has read and understands this disclaimer.	Check Box	Yes	No		X
SOLICITATION ERRORS: If the proposer discovers any ambiguity, conflict, discrepancy, omission, or other errors in the solicitation, the applicant should immediately notify the SGC of the error in writing and request modification or clarification of the solicitation. The SGC will provide modifications or clarifications by written notice to all parties who requested the solicitation, without divulging the source of the request for clarification. The SGC is not responsible for failure to correct errors.					
Check here to indicate that the proposer has read and understands this disclaimer.	Check Box	Yes	No		X
PROPOSAL MODIFICATION OR WITHDRAWAL: Proposers may withdraw or modify a research submission before the solicitation deadline by sending a letter to the SGC Contracts Manager. Applications cannot be changed after that date and time. A proposal cannot be "timed" to expire on a specific date. For example, a statement such as the following is non-responsive to the solicitation: "This application and the cost estimate are valid for 60 days."					

Check here to indicate that the proposer has read and understands this disclaimer.	Check Box	Yes	No		X
COMMUNICATIONS: The Grant Recipients are required to use the SGC and CCI names and/or logos for all published materials related to the research funded through this program. All press releases, fact sheets, talking points and press interviews related to this research must include the phrase "administered by the Strategic Growth Council and funded through the California Climate Investments," and logos should be included where applicable. Additionally, a point of contact for all press inquiries and communications needs regarding awarded research must be submitted to the SGC (name, phone number and email address). Finally, Grant Recipients will be required to prepare a two-page summary of the awarded research, corresponding to the template provided by the SGC for display on the SGC's website and use for other communications purposes.					
Check here to indicate that the proposer has read and understands this disclaimer.	Check Box	Yes	No		X
CALIFORNIA AIR RESOURCES BOARD (CARB) REPORTING REQUIREMENTS: Grant Recipients must adhere to the reporting requirements outlined by CARB in their Funding Guidelines to Agencies that Administer California Climate Investments. CARB approved this update to the Funding Guidelines in August 2018. Future guidance may include changes to reporting requirements for this research project.					
Check here to indicate that the proposer has read and understands this disclaimer.	Check Box	Yes	No		X
OPEN ACCESS PUBLISHING: AB 2192 requires that state-funded research projects "shall provide for free public access to any publication of a peer-reviewed manuscript describing the state-agency-funded knowledge, a state-agency-funded invention, or state-agency-funded technology." (http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB2192) Grant Recipients are responsible to budget for open access publishing for all of the published materials that relate to the awarded research. Free and open access is required to final manuscripts of scholarly articles, reports, and other products produced entirely or primarily with program funding. These and additional published materials will be required to be submitted to Integrated Climate Adaptation and Resiliency Program's Adaptation Clearinghouse after acceptance, and no later than upon publication. Such manuscripts shall be made publicly available through the Clearinghouse by the Governor's Office of Planning and Research one year after publication by the journal.					
Check here to indicate that the proposer has read and understands this disclaimer.	Check Box	Yes	No		X
INTELLECTUAL PROPERTY: Grant Recipients must possess their intellectual property or a legal right to develop the technology (e.g. through a contractual/license agreement). UTC-518 and the associated patent rights attachment (http://www.dgs.ca.gov/ols/Resources/ModelContractLanguageUniversities.aspx) are the appropriate vehicles for addressing technology commercialization intellectual property ownership.					
Check here to indicate that the proposer has read and understands this disclaimer.	Check Box	Yes	No		X
RESEARCH COMPLIANCE STATEMENT: The proposing institution agrees to comply with all state and federal laws, if applicable, that apply to the proposed research including, but not limited to, human subject research, research misconduct and conflict of interest regulations.					
Check here to indicate that the proposer has read and understands this disclaimer.	Check Box	Yes	No		X
Indicate if any of the following statements apply to the research or to the proposing institution:					
The proposed research involves human subjects.	Check Box	Yes	No		
The proposing institution has developed a scientific integrity policy.	Check Box	Yes	No		

The proposing institution has developed a data sharing policy.	Check Box	Yes	No		

Section VII – Attachments: Researchers can attach up to ten separate files. Each attachment file size must be 2 GB or less. The following list of attachments are required as part of the submission package.

1) **Title Page** (one page)
2) **Project Narrative** (five pages, including five required sections, charts, figures, or diagrams)
3) **Research Institution Deployment Profile** (one page)
4) **Project Summary** (two pages per project in portfolio)
5) **Resume** (one page for each senior personnel working on the project)
6) **Letters of Support** (one page for each reference, maximum of seven letters)
7) **Budget Forms** (use template)
8) **Scope of Work** (use template)

ATTACHMENT 2: PROJECT BUDGET

Organization: _____ Principal Investigator: _____

Proposal Title: _____

BUDGET CATEGORIES			From: To:	7/1/2018 6/30/2019 YEAR 1		7/1/2019 6/30/2020 YEAR 2		7/1/2020 6/30/2021 YEAR 3		7/1/2021 3/31/2022 YEAR 4		TOTALS	
PERSONNEL: Salary and Fringe Benefits.													
Name and Payroll Title	Monthly Rate	Benefits (% of Salary)		Months	Amount	Months	Amount	Months	Amount	Months	Amount	Months	Amount
					$0		$0		$0		$0	**0**	**$0**
					$0		$0		$0		$0	**0**	**$0**
TOTAL PAYROLL COSTS:				**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**
TRAVEL													
Item	Cost	Per		Nmbr.	Amount	Nmbr.	Amount	Nmbr.	Amount	Nmbr.	Amount	**Nmbr.**	**Amount**
					$0		$0		$0		$0	**0**	**$0**
					$0		$0		$0		$0	**0**	**$0**
TOTAL TRAVEL COSTS:				**$0**		**$0**		**$0**		**$0**		**$0**	
MATERIALS & SUPPLIES													
Item	Cost	Per		Nmbr.	Amount	Nmbr.	Amount	Nmbr.	Amount	Nmbr.	Amount	**Nmbr.**	**Amount**
					$0		$0		$0		$0	**0**	**$0**
					$0		$0		$0		$0	**0**	**$0**
TOTAL MATERIAL AND SUPPLY COSTS:				**$0**		**$0**		**$0**		**$0**		**$0**	
MISCELLANEOUS													
Item	Cost	Per		Nmbr.	Amount	Nmbr.	Amount	Nmbr.	Amount	Nmbr.	Amount	**Nmbr.**	**Amount**
					$0		$0		$0		$0	**0**	**$0**
					$0		$0		$0		$0	**0**	**$0**
TOTAL MISCELLANEOUS COSTS:				**$0**		**$0**		**$0**		**$0**		**$0**	
CONSULTANTS													
Payroll													
Firm	Title	Hr. Rate		Hours	Amount	Hours	Amount	Hours	Amount	Hours	Amount	**Hours**	**Amount**

					$0		$0		$0		$0	**0**	**$0**
					$0		$0		$0		$0	**0**	**$0**
				0	$0	0	$0	0	$0	0	$0	**0**	**$0**
Travel													
Item	Cost	Per		Nmbr.	Amount	Nmbr.	Amount	Nmbr.	Amount	Nmbr.	Amount	**Nmbr.**	**Amount**
					$0		$0		$0		$0	**0**	**$0**
					$0		$0		$0		$0	**0**	**$0**
				$0		$0		$0		$0		**$0**	
TOTAL CONSULTANT COSTS:				**$0**		**$0**		**$0**		**$0**		**$0**	
SUB-RECIPEIENT													
Payroll													
Organization	Title	Hr. Rate		Hours	Amount	Hours	Amount	Hours	Amount	Hours	Amount	**Hours**	**Amount**
					$0		$0		$0		$0	**0**	**$0**
					$0		$0		$0		$0	**0**	**$0**
					$0		$0		$0		$0	**0**	**$0**
Travel													
Item	Cost	Per		Nmbr.	Amount	Nmbr.	Amount	Nmbr.	Amount	Nmbr.	Amount	**Nmbr.**	**Amount**
					$0		$0		$0		$0	**0**	**$0**
					$0		$0		$0		$0	**0**	**$0**
				$0		$0		$0		$0		**$0**	
TOTAL SUBRECIPIENT COSTS:				**$0**		**$0**		**$0**		**$0**		**$0**	
TOTAL DIRECT COSTS:				**$0**		**$0**		**$0**		**$0**		**$0**	
INDIRECT COST RATE													
Budget Item	ICR %	F&A Base		Less:	Amount	Less:	Amount	Less:	Amount	Less:	Amount	Less:	Amount
PAYROLL					$0		$0		$0		$0	**0**	**$0**
TRAVEL					$0		$0		$0		$0	**0**	**$0**
MATERIALS & SUPPLIES					$0		$0		$0		$0	**0**	**$0**
MISCELLAENEOUS					$0		$0		$0		$0	**0**	**$0**
CONSULTANTS					$0		$0		$0		$0	**0**	**$0**
SUBRECIEPIENTS					$0		$0		$0		$0	**$0**	**$0**
TOTAL INDIRECT COSTS:				**$0**		**$0**		**$0**		**$0**		**$0**	
TOTAL BUDGET REQUEST:				**$0**		**$0**		**$0**		**$0**		**$0**	

ATTACHMENT 3: SCOPE OF WORK

The Scope of Work (or work plan) should provide sufficient detail for a reader to understand how the proposed research will progress. The scope must identify specific information about the flow of work, breakdown how the research stages (or tasks) will occur, define a list of expected deliverables, and propose a timeline that anticipates the timing of each stage and when milestones or outcomes are expected to transpire. This document should present information in a segmented fashion that contains a graphic timeline as well as a table of objectives, activities, and responsibilities. The elements of the Scope of Work should include:

Background. Provide overarching statements that characterize the goals, objectives, and actions related to the purpose of this research; and any practical and policy information, technological requirements or specifications, and legal limitations that may apply.

Specific Tasks or Phases of Work. Outline the specific tasks (or phases) that are being proposed, breaking down the order of how each stage will occur, and tying each segment to objectives, approaches, methodologies and/or strategies that will be employed:

- Describe the items, products, or results to be delivered.
- Discuss the roles of the research institution, partners, and/or sub-recipients.
- Identify any planned outreach or engagement.
- Provide information about delivery of completed progress reports and final report, or other applicable materials.

Timeline & Schedule of Deliverables. Submit a chart that identifies performance timelines or completion dates and includes anticipated start and completion times for each task/phase of the project. In addition, include a schedule of deliverables that indicates the expected completion date for each task deliverable. Please use the below template for the schedule of deliverables.

Deliverable	Description	Due Date
The following Deliverables are subject to Section 19. Copyrights, paragraph B of Exhibit C in CMA (AB20) State/University Model Agreement Terms & Conditions 518 **http://www.dgs.ca.gov/ols/Resources/ModelContractLanguageUniversities.aspx**		

ATTACHMENT 4: PROPOSAL NARRATIVE

The Proposal Narrative should detail the applicant's plan and approach for conducting R&D that will advance one of the Research Innovation Fields outlined in this solicitation in Section V C. This narrative should be 4-5 pages in length (11-pt font and 1" margins). It should concisely address each of the five sections below using the headings provided, without sacrificing sufficient details requested. The narrative should be written in straightforward language, keeping in mind that the members of the Advisory Committee possess an understanding of the content knowledge but not necessarily expertise in the specific area of study. Proposals should avoid the use of technical or discipline-specific jargon. Spell out any acronyms that are not universally understood.

The Proposal Narrative should consider the criteria developed in Figure 6: Technical Merit Criteria and must consist of the following five sections, and include the topics (with clear headings) identified below:

1. **Description.** Provide the following elements for the research being proposed:

   Research and Development Aims and Objectives. A concise description of what the research proposal intends to do. Describe the overall goal of the project portfolio, and then the individual aims and objectives. Specified objectives should enable comparison later to project results.

   Significance/Importance. Provide a clear and compelling rationale for why the proposed R&D matters. Indicate how the research proposal will advance knowledge, address an important scientific, scholarly, or society-wide problem, demonstrate intellectual or creative significance, and/or benefit society in meaningful ways. If applicable, include hypotheses to be tested, specific goals/aims, and relevant background/information or preliminary data in support of the project portfolio.

   Innovation/Novelty. Outline the ways in which this portfolio of projects' work is new/innovative in its approach, methods, or techniques in comparison to previous work in the field.

   Research and Development Approach and Methods. Information about research subjects (inclusion/exclusion criteria, recruitment methods, informed consent procedures, research sites). Discuss R&D methods being applied. Describe how project outcomes will be translated and disseminated to support climate-action.

   Anticipated Impact and Outcomes. Indicate the value or impact of the proposed project portfolio, once completed. How do the projects holistically reflect the Research Investment Plan's Program Goals, address the specific California Climate Change Technology and Solutions Initiative's objectives, and advance the State's Climate Goals? In what ways will the results of this work be transformative within its discipline and beyond? What broader societal benefits does it promise?

2. **Greenhouse Gas Emission Reduction Potential**

   Greenhouse Gas Emission Reduction. The project portfolio's potential for GHG emission reduction; Discussion of what the current status quo of the technology is, and how the proposed project(s) will advance and improve on the status quo.

   Replicability/Scalability. Describe how this technology can be easily replicated and scaled outside of California; Outline anticipated barriers/obstacles and strategies to overcome them.

3. **Benefits to Low-Income and Disadvantaged Communities**

   Benefits to Low-Income and Disadvantaged Communities. Identify exactly what types of benefits—both indirect and direct—are anticipated for the identified communities. Some examples are:

- Reduces health disparities (e.g. arising from local pollution);
- Lowers costs of living (e.g. housing, transportation, or energy);
- Increases access to affordable transportation or improves mobility;
- Increases family income;
- Increases access to resources like healthy food or opportunity/amenities/services;
- Increases workforce and economic development through job readiness or career opportunities;
- Residents of low-income and/or disadvantaged communities will be eligible for a significant number of jobs created by the project(s); and,
- High percentage of the expected users of a service, facility, or technology will be low-income.

4. Project Portfolio Management

Project Portfolio Management Structure. Describe the framework that will be used to structure the partnerships identified in this submission to ensure a diverse representation from policy professionals, academic experts in various physical and social science fields of study, community based organizations, economic leaders, and/or other key stakeholders. Include a description on the meaningful partnerships, along with clearly delineated roles and responsibilities for each partner organization. Explain how non-traditional research partners in this structure will enrich the structure and help to achieve the goals of the proposed R&D.

Improving Research and Development Quality, Validity, and Sensitivity. Provide a clear and compelling rationale for how the proposed R&D will use meaningful engagement to draw upon the wisdom of a larger body of stakeholders, promote trust among interested parties, improve how findings are translated into policy and practice, and accelerate the uptake of research findings into climate action.

Innovation/Originality. Discuss how existing collaborative partnerships, and proposed engagement and partnership structure will support and advance the project portfolio's relevance and the utility of the proposed research process, methodology, and results. How will this engagement build relationships that result in opportunities for input and feedback on the project's design and approach through delivery mechanisms?

Capacity for Meaningful Engagement. Discuss the history and expertise of the research proposal team at engaging other research institutions, multi-stakeholder partnerships, key stakeholders, community based organizers, policymakers, and others to transform research findings into action, and to maintain a meaningful level of ongoing collaboration throughout and beyond the duration of a specific project. Provide examples of how this engagement was consistently applied throughout all phases of a research endeavor. Demonstrate how these efforts resulted in innovative and meaningful policies, programs, or practices built upon the input and expertise of different partners (i.e., the State, Tribes, or local public agency staff; advocacy groups, student associations, or community-based organizations; industry trade groups, business associations or workforce development boards; overburdened individuals, businesses and groups; etc.).

5. Tracking Progress

Feasibility, Resources, and Timeline. Describe the plan for carrying out the proposed research activities, including research design, work plan, methodological approach, availability of necessary resources, and timeline for completion of tasks/milestones.

Project Portfolio's Current Status. Describe the progress on the portfolio's projects to date; Identify which TRL on the US Department of Energy's Technology Readiness Level evaluation system (https://www.directives.doe.gov/directives-documents/400-series/0413.3-EGuide-04/@@images/file) the project(s) currently are; Demonstrate knowledge of the proposed community(ies) to deploy in; Reference any potential obstacles mentioned in the proposal narrative.

Metrics to Track Progress. What is your plan / mechanism for assessing the project's success and evaluating outcomes? Include benchmarks, milestones, and metrics to track progress of project portfolio's success; Outline how technology development process will be monitored using the US Department of Energy's Technology Readiness Level evaluation system.